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ABSTRACT

The symposium on research into preschool education was the second in a series designed to facilitate exchange of views, experiences and other information among educational researchers. This volume contains a selection of the papers presented. The following are noted in the conclusions of the symposium: (1) preschool education should work in close cooperation with parents, supplementing but not supplanting the home; (2) preschool education has a vital role to play in combatting social disadvantages; (3) there are recent tendencies to emphasize carefully structured programs, which seem able to produce positive results; (5) there should be closer cooperation between preschool and primary levels to avoid the loss of advantages gained from preschool experience. The papers provided here include the following: (1) "Factors Which Have Influenced the Development of Preschool Education"; (2) "The Present State of Preschool Education in the Member States of the Council of Europe"; (3) "Problems and Trends of Research into Preschool Education"; (4) "Some Psychological Aspects of Various Preschool Programmes"; (5) "The Influence of Research into Cognitive Development on Current Trends in Preschool Education"; (6) "France: The Organisation of Research into Preschool Education"; (7) "Sweden: Research Concerning the Development of the Content and Methods of the Preschool Curriculum"; (8) "Netherlands: Preschool Education and Developmental Psychology--Research Concerning the Age Group 2-7 Years"; and (9) "Finland: The Effect of Training on the Grammar of Preschool Children." (KM)

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EDUCATIONAL RESEARCH SYMPOSIUM ON

RESEARCH INTO PRE-SCHOOL EDUCATION

JYVÄSKYLÄ, FINLAND, 7-11 DECEMBER 1971

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INTRODUCTION

The Symposium on research into pre-school education, organised by the Finnish authorities under the auspices of the Council of Europe at the University of Jyväskylä from 7 to 11 December 1971, was the second in a series of experimental symposia initiated by the ad hoc Committee for Educational Research.

The aim of these symposia is to bring together educational researchers and administrators of member States of the Council for Cultural Co-operation and to give them the opportunity to exchange views on a subject of common interest. It is intended that the symposia should provide researchers with a chance to learn of the latest trends in countries other than their own, to share experience concerning methodologies used and results obtained and thereby to co-ordinate efforts. It is likewise intended that administrators through their participation should find help in solving the problems they have to face in the formulation of policy. By providing a forum for discussion, the educational research symposia, it is hoped, will contribute to promoting closer collaboration between researchers and governmental representatives in dealing with common problems in education in Europe and to encouraging a free flow of information across educational frontiers.

The symposia are still of an experimental nature. It will be noted that among the conclusions reached at Jyväskylä is the recommendation that future symposia should be centred on a specific rather than a general theme, and that emphasis should be placed on small group and informal discussion rather than on formal lectures. This recommendation will be taken into consideration in the planning of future symposia - that such symposia should be continued being another of the recommendations made at Jyväskylä. In view of its experimental nature, participation in the Symposium was limited to the thirteen countries which had expressed a specific interest in the field of pre-school education. Future symposia will be held within the framework of the twenty-one member States of the Council for Cultural Co-operation.

In its conclusions the Symposium on research into pre-school education drew attention to the fact that pre-school should work in close co-operation with parents, supplementing but not supplanting the home. It was felt that pre-school education has a vital role to play in combatting social disadvantages, and in ensuring that as many children as possible are able to make the most of their potential. The Symposium noted recent tendencies to give emphasis to carefully structured programmes and that such programmes would appear to be able to produce positive results. Participants agreed that to avoid subsequent loss by children of advantages gained from pre-school experience there should be closer co-operation between pre-school and primary levels. Education at this stage should be conceived as a continuous whole. It is hoped that the Symposium will serve to guide the Council for Cultural Co-operation in its future deliberations on pre-school education.

This volume, which has been produced at the request of the Finnish authorities, contains a selection of the papers presented at Jyväskylä, in particular those having direct reference to the research situation. The Secretariat has taken the liberty of making certain linguistic modifications and also of shortening some of the contributions. The full texts of all the papers presented at the Symposium can be found in a special edition of Kasvatus, the Finnish journal of education published by the Institute for Educational Research of the University of Jyväskylä.

The Council of Europe expresses its thanks to the Finnish authorities for organising the Symposium and to all the lecturers for their contributions.

Strasbourg, May 1972

Niels BORCH-JACOBSEN
Director of Education and of
Cultural and Scientific Affairs

PS 006561

OPENING SESSION

OPENING ADDRESS

Jouko TYYRI, Minister of Education

This Symposium has three aims. The first is to identify the main problems and trends and to take stock of current pre-school education curriculum research; the second is to seek out the areas of pre-school education where there is a particular need for research; the third is to apply existing findings to the planning of future pre-school education. It is a question, therefore, of co-operation among researchers on the one hand, and of co-operation between academics and governmental representatives, on the other.

These aims may be thought rather ambitious, but they show that international co-operation is taking more and more practical forms. This reflects a real desire to help other member States - in this case in their efforts to develop pre-school education.

Everywhere there is a tendency to increase the part played by research in the development of the education system. Longrange schemes are drawn up for allocating annually a certain percentage of the budget to research and development. At the same time as member States are in this way improving their facilities for scientific research, a need for international co-operation is making itself strongly felt. Despite particular national characteristics, the problems are so much the same that it is feasible to co-ordinate our efforts and use our economic and intellectual resources efficiently according to a predetermined plan.

Such co-operation is especially necessary and possible when, in different countries, at the same time and in pursuit of the same social objectives, a new level of education is being introduced, namely pre-school education. It is in devising a strategy for a new level of education that research must be used as effectively as possible.

The problems being dealt with at this Symposium are crucial from the point of view of the development of pre-school curricula; in Finland, we attach special importance to pre-school education as a means of increasing cultural equality. But how can we channel research into the areas which are important for the development of the education system, and how can we ensure that the authorities use the findings of that research? The question is thus one of co-operation between research and administration.

In all countries efforts are being made to achieve such co-operation by setting up joint bodies representing both administration and research. But there is one obstacle to this interaction, and that is the difference in researchers' and administrators' ways of thinking. To find common ground is perhaps the sole aim of this Symposium where it is also possible to learn mutual understanding through semi-official contacts.

It will give me great pleasure if this Symposium helps at least a little to bridge the gap between those different ways of thinking.

This Symposium is officially styled "experimental". It is one of the first of its kind, involving both research workers and governmental representatives, to be arranged by the Council for Cultural Co-operation.

We have tried, in organising this Symposium, to show that we for our part are firmly resolved to contribute to the advancement of co-operation in the educational field.

I wish this Symposium, jointly prepared by Finland and the Council for Cultural Co-operation, every success.

THE SCANDINAVIAN SEMINAR ON PRE-SCHOOL EDUCATION

Åse Gruda SKARD

A seminar on pre-school education, organised by the Scandinavian Council for Cultural Exchange, was held in Hurdalen, Norway on 4-6 October 1971. The seminar did most of its work in groups and only united in plenary sessions for very short periods at the start and at the end. The seminar brought together representatives of research work, of the central administration, of practising pre-school teachers coming straight from contact with living children, and of clinical psychologists. Most of those present were able to understand each other through the use of a mixture of Scandinavian languages, but there were difficulties in reaching across the professional linguistic frontiers - though of course it was this mixture of professions which gave the seminar its special value.

There was one main problem that recurred in all the discussion groups and dominated much of our other gatherings. This problem was the question of intellectual development and stimulation. We were contrasting on one hand the demand for teaching, for intellectual direction in the pre-schools, and on the other hand the demand of the children for creativity, self-direction, and play. Should pre-school institutions let the activity within their walls (including the out-door playgrounds) be initiated by the children themselves, or should the teachers take the matter in their hands, present the children with stimulating material, pose problems to be solved, teach skills such as reading, writing, drawing according to certain rules, rhythmic movements according to set patterns, etc.? I think the opinions in this regard were quite divided. But on the whole at the end of the seminar the participants left with greater understanding for the children's emotional needs, for their problems or conflicts imposed upon them in their difficult modern home-life, and their individual background in the past and the present, than many of them had at the beginning of the seminar. On the other hand, it seemed to me that there was a general agreement that pre-school children also need a great deal of intellectual stimulation, enrichment of language, encouragement in solving problems, exercise in such functions as analysis, generalisation, experimentation, verification of hypotheses, etc. Such work has undoubtedly been done galore by pre-school teachers all through the years, but the work by Piaget has made us feel that this important work can be done in more conscious and more systematic ways than before. However, I think we all realised that it was of no use to make a child sort out red or blue, for example, or maybe round and square figures, when his mind on arriving in the day-care centre was filled with the problem of, say, a quarrel between his parents or the frustrating rules of a mad janitor chasing children out of the yard - or whatever it might be that created emotional stress and burdens for a small child of the difficult world of today.

Besides this main problem the seminar in Hurdalen took up a number of other problems. I shall mention only two of them that seemed to be more generally in the foreground than others:

1. Following a lecture by Professor Karl-Gustaf Stukát, and the surveys by two American visitors concerned with the Head Start project and the follow-up programmes in the USA, the discussions were geared towards the possible research work that might be done regarding the effect of pre-school education. In this way the Hurdalen seminar paved the way, so to speak, for this symposium. It seemed clear at our Hurdalen discussions that the various aspects of the influence on the children of pre-school experiences could not be examined to the same degree.

The problem of emotional stability, relief from emotional stress, etc., can hardly be investigated at all. Such effects may be observed by the staff in the institutions, or by the parents, and may perhaps be registered by the adults as impressions, but hardly more than that - important as such effects after all may be. But the use of measurement in this matter, such as registration of heart rate, psycho-galvanic reflexes, etc., seem still to belong to the laboratory and not to the daily life in a day-care centre.

Social development and social adjustment appear to lend themselves more readily to observation and rating. One can compare children who have been to pre-school institutions with those who have not had such experiences as to their adjustment when first beginning school, their ability to play with other children, their independence of adults as to routine matters, etc. It may be more difficult, however, to find out about their confidence towards adults, their confidence in themselves, their self-assertiveness and other more general and fundamental traits.

As research has already shown, it is more feasible to measure intellectual progress and the effect of pre-school education upon school subjects, problem solving, abstract thinking, language etc. Here, however, the positive results are usually found immediately after the children enter grade school. They are not so easy to ascertain in the long run. One also runs into difficulties in establishing approximately clean control groups, as the individual homes and the treatment offered by the different parents may differ even more than the group as a whole differs from the pre-school group.

Valuable insight, however, may be gained from the comparison of different day-care institutions as to the effect of different pedagogical programmes. Here the more modest research plans seem to come out as the more promising, such as the effect of noise on the children, of the arrangement of and length of rest periods, of the distribution of lonely play and group activities, and of self-initiated and adult-initiated play periods, of various methods to obtain the optimal linguistic training, etc. At Hurdalen we had the impression that, on the whole, surprisingly little research is done on pre-school education and its effect on children. It seems as if people who go in for work in pre-school institutions are more concerned with offering the children support and assistance than with research problems.

2. The second somewhat minor problem much discussed in Hurdalen was the similarity or difference in treatment of boys and girls. This problem came to the fore mainly because of the present feminist movement, but also as a result of the already year-long campaign for equal status of men and women in which especially Sweden has been a lively battleground. I believe there was no disagreement in Hurdalen as to the principle of equality of education for boys and girls, but there was some hesitation as to the desirable reactions to the children's own games and attitudes that mirrored the common relationships in the surrounding society. When, for example, some boys ridiculed another for his playing with dolls, or when girls threw the father doll out of the dolls' house because he "should go to work" and was not included in the family, the daily situations and the norms of the parents came into definite conflict with the principles of the institutions. But how should the situations be treated?

The solution, as given in Hurdalen, was to let the children alone when they themselves started such play, but to counteract the trend by role play initiated by the teachers, by unequal expectations relating to behaviour (such as expressions of emotions), by the inclusion of both sexes in all kinds of household chores, cooking, etc., and the acceptance of boys as well as girls playing with dolls, teddy-bears, cars and all kinds of toys.

This conflict regarding the roles of the sexes between the attitudes and principles accepted within the institutions and those prevailing in society as a whole, is actually only one example of conflicting norms. There are many more of such conflicts. The pressure from the society as regards competition between individuals, achievement and success in reading and other intellectual functions,and other demands coming from without,constituted a matter of concern for many of the participants at Hurdalen. Many felt that one main task of pre-school institutions should be to protect young children from undue pressure from society and even from the parents. But then what would come of the co-operation between parents and the staff of the institutions? This problem was left as an unsolved question.

And it was far from being the only unsolved problem. There evidently were plenty of problems to be tackled by new seminars. We shall hope to gain deeper insight into many of them here in Jyväskylä.

ON THE PRESENT STATE OF PRE-SCHOOL EDUCATION

FACTORS WHICH HAVE INFLUENCED THE DEVELOPMENT OF PRE-SCHOOL EDUCATION

Annika TAKALA

The factors which have influenced the development of pre-school education could be examined from the historical point of view. We could describe the pedagogical ideas of people who have realised the importance of early childhood and who have worked for the development of pre-school education. This kind of approach - along the lines Comenius-Pestalozzi-Froebel - would in my opinion be too traditional although in many ways it might serve to broaden the background against which to view the pre-school problems of our own society.

It would also be possible to consider as a frame of reference the relation of education as a whole to society and study the factors that at different periods in different societies have determined access to education, for what tasks education has prepared people: what kind of education has been provided in a society close to nature and living on traditions - what has been characteristic of a society based on the use of slaves - what is typical of education in a feudal society - how the educational system changed with the advent of industrialisation. As a whole, this approach would be very laborious and it would not be very relevant with regard to solving today's problems in pre-school education.

In the following an attempt is made to explain how the organisation of pre-school education is determined by the various institutions of society and what are the different "working hypotheses" which can - explicitly or implicitly - be made when tackling pre-school problems.

I

Pre-school problems are closely connected on the one hand with the school; on the other hand with the family. These problems are sometimes studied in a fairly short-term perspective, which extends from pre-school to the lower level of the primary school. The school system with its objectives and the readiness to learn which today's compulsory school system presupposes can be considered as starting points. Development of this readiness is thus seen as the main task of the pre-school. In this respect the classics of pre-school education like Comenius, Pestalozzi and Froebel have a fairly comprehensive outlook. They all have a common frame of reference, the whole person's life, and the objectives of pre-school education are seen against this background. A central problem in the education of pre-school children has been, and still is, the question of how the educational rights and responsibilities are divided between the home and the other institutions of society. When these problems are dealt with, it is possible to regard as a self-evident starting point that the functions of the family in society are what they have traditionally been, and that the roles of men and women are "traditional" within and outside the family. When the school system is considered "given" with its objectives, organisation, curricula and methods, the pre-school becomes necessary as a complementary and supportive element to develop children's school readiness.

It is fairly easy to formulate verbally elegant and progressive educational objectives, but we have to ask to what extent the objectives are relevant in our society and whether the members of our society are motivated to work for their fulfilment. New alternatives for solving the problem of the role division between men and women are sought all over the world at the moment, especially concerning women's participation in economic, political, social and cultural activities. The expansion of women's participation has been justified by the principle of equal rights. On the other hand industry has employed women - which may have brought about much faster solutions of how to get women on to the labour market than the decades of discussion about equal rights. Whether we consider the needs of production or the struggle for equality as the primary cause, the fact that women work outside the home leads to new problems. Attempts have been made to solve these problems in two different ways:

- by developing public services which facilitate the care and education of children and help to cater for other family needs;
- by attempting to change the role of men so that all practical tasks concerning the home are divided between men and women as is done in production participation in industry.

I have always felt as somewhat negative the fact that women have been used as mere pawns in the labour market. Opinions expressed in public discussion about the duties of the woman and mother have followed too closely the needs of the labour market. Whenever there has been underemployment, the theories concerning "mother deprivation" have been popular, and mental disorders, juvenile delinquency, and other harmful consequences caused by this phenomenon have been found in research results. When there has been a great need of women to keep the wheels going, new studies and results have come up to prove that employment of mothers has many, if not predominantly, positive consequences.

Estimates concerning to what extent home education and public pre-school education and their many possible variations have a positive or negative effect on a child's development are value-judgments. One group of researchers considers important the total conception which children create from the environment, society and the world. Another group of researchers regards as the most important problem the achievement of formal objectives like verbal development, ability to solve problems, etc. Individualistically oriented people consider it self-evident that children develop as individuals and as members of the family to compete with corresponding "units"; collectively oriented people feel that children should be taught to help, share and co-operate with others. If the objectives are not explicitly stated, it is obvious that various kinds of conclusion are drawn concerning the positive or negative effects of the home and public pre-school education.

The organisation of pre-school education is connected with many basic attitudes of the society and its culture: the position and functions of the family, the division of responsibility between families and the society with regard to the new generation, the roles of man and woman, the customs dealing with the inheritance of property and, finally, whether the basic principle of society is individual and family competition or co-operation.

II

The advent of industrialisation led to the use of women as cheap labour, left children without care, supervision and education, and led even to the use of child labour. These circumstances jeopardised the health and survival of children. Statistics reveal extremely high illness and death rates among working class children compared to children of higher socio-economic strata. The distressing position of children led to the establishment of various kinds of school including pre-schools. These schools were often maintained by employers for their employees' children or by welfare organisations and the church. Since the rise of the industrial working class, the labour movement has struggled to improve the living conditions and education of its children. I do not have the necessary information to analyse the educational plans of the labour movement in different countries. I can only state that the various labour movements have become institutions which cannot be neglected when the development of pre-school education is dealt with. I will in this connection cite only a few examples. Among the educational theorists in the German labour movement at the end of the 19th century and the beginning of the 20th was Clara Zetkin who demanded that the state should assume responsibility for pre-school education and that it should be made free. Furthermore, she demanded that secular pre-school education should be developed. As grounds for public pre-school education Zetkin stated among other things that pre-school would offer a chance to use the best pedagogical staff and equipment for the benefit of pre-school children.

Economic competition has caused many social problems, such as unemployment, crime and discrimination against minorities. To remove these problems educational programmes - compensatory education at pre-school age - have been created, for example the American programmes to abolish poverty. It is thought that compensatory education may make deprived children more capable of competing and that it may help to reduce the number of those who become 'victims' of the competitive society. It is evident that the basic problems of society are not tackled as vigorously as they should. These programmes could partly be compared with ideas like the following: if all pre-school children were given special training in running, no one would be last in a running competition. On the other hand, we have to realise that the equalisation of the living conditions of pre-school children may have a significant part to play in decreasing social inequality, and it might be efficient when combined with other activities aiming at the same goal. During the last few years attention has been directed towards the factors which create, maintain and increase inequality in different societies and communities.

Among today's problems, caused by economic institutions, is the formation of ever growing production units to meet ever growing competition. Man's productive value depends on his knowledge, skills and ability to learn. In economic competition "brain power" becomes important, and the activation of "ability reserves" with the help of early education becomes an "investment in ability capital". All this may produce training programmes for pre-school children, where the goals - without explicit definition - are dictated by the needs of today's production. Abilities and attitudes are developed so that individuals can be used to perform highly fragmented duties, and will not develop comprehensive and many-sided views of the problems of their environment, society and the whole world. Efforts towards achieving economic integration are reflected as a pressure towards the development of education systems that are similar, one to the other. This would facilitate the mobility of labour in accordance with the interests of capital. Activities to increase economic growth become contradictory. In countries, where there exists a shortage of skilled workers, the economic sector may take a special interest in pre-school education and in special programmes for deprived children. At the same time decisions are taken which increase the number of immigrant children living in a deprived environment. These children are deprived of education in their own language. They have no ties to any culture, and because of their lack of ability in the local language, and because of inadequate schooling they easily fall into the lower classes of the labour market.

III

The interest of political instituions in pre-school education has explicitly been revealed in the changes of social ideologies. In countries which have experienced a socialistic revolution, great attention has been paid after the revolution to the establishment of nurseries and kindergartens. Among the main reasons for this has been that the care for the health of the majority of mothers and children in pre-revolution society had been insufficient and the needs were urgent. In part, the aim of public pre-school education has been to create solidarity towards the new society and its principles. Attempts to decrease the educational influence of the family have appeared when it has been feared that families hand down admiration of the "old" society, and in some ideological circles there have been attempts to change the position of the family completely. On the other hand, there have been educational theorists in socialistic countries who have felt that public pre-school education complements, rather than replaces home education, and these theorists have supported their harmonious interaction presuming that families, too, will become prime sources for education which develops social equality.

I mentioned earlier Clara Zetkin's demand for the "secularisation" of pre-school education. This demand often connected with labour movements may partly have originated because the church had been experienced as an institution which in a highly developed "class-society" had legitimatised social inequalities and the prevailing use of power. Kindergartens based on the Froebelian tradition have in this respect represented a compromise: on one hand the expansion of state-owned kindergartens has been thought desirable, on the other hand religious education has been considered as one of the functions of the pre-school. The fact

that kindergartens have also been ideological battle fields is reflected in some episodes of the German labour movement from the turn of the century; free kindergartens had been established by the labour movement but the police closed them because their programme did not include enough "religious and patriotic educational elements". The opposition that public pre-school education has met in many countries is based on the fear that pre-school education provided by the state would mean political socialisation or political indoctrination aimed at small children. Some Americans, who oppose public pre-school education, have asked whether the aim is "that government should control the minds of four-year-olds".

I feel that the following question should be asked: If pre-school education supports home education, as is the case in the countries we represent, what values does pre-school education transmit? Perhaps it would be easier to find fundamental values in the education of pre-school teachers than to analyse the pre-school.

The war efforts of political institutions - for example during World War II - led to a rapid increase in the number of pre-schools in some countries, because women were needed in the armament industry. From the time prior to World War II, examples can be found of how kindergartens were used to serve the aims of a military institution. The educational objectives emphasised above all the development of physical condition and will-power, and systematic "bravery tests" were planned for the children. The boys were trained to be soldiers, and girls to be mothers. An educator of this period described how a girl took care of her dolls and a boy killed a bird with a stone - this was how a future loving mother and a future defender of the native soil played! Examples like this seem to us repulsive - and a thing of the past. I do not wish to look for corresponding examples in today's world. I only want to say that we should be alert to notice when the aims set for pre-school lead to goals different than those of building a more human world.

Ways of solving international conflicts, other than resort to war, have been created. The establishment of new alternatives and institutions has been reflected in the curricula of kindergartens as an attempt to promote the common responsibility and mutual understanding between nations.

IV

Scientific research can be regarded as an institution which influences concepts concerning child development and learning, and also work in the pre-school. It has been mentioned earlier that other institutions in society may also strongly influence the direction of research and even the interpretation of research results, and that certain types of result and theory are used as weapons in political conflicts.

It should, however, be realised that basic research produces information on new processes or new general rules concerning already known processes, and by so doing it may bring about fundamental changes in attitudes and also gradually in educational practice. Only a few fields of research, which have had a significant effect on theories concerning the development of pre-school children, will be mentioned here:

(a) Experimental studies on deprivation have been carried out on different species of animal and the results obtained have been consistent. Hypotheses have been made on the basis of these results with regard to the effect of the corresponding factors on the development of children, and they have also partly been verified - not experimentally, of course, but by comparing children living in different conditions. Defects resulting from deprivation have been found both in cognitive and emotional development. In different experimental programmes for pre-school children, it has been established that stimuli directed towards different sensory areas, factors activating motor activity or emotional reactions are favourable to children's development. It has also been established that continuous stimuli and stimuli which systematically increase in difficulty are important.

(b) The unfavourable factors in the environment of children (such as parental poverty, ill health, mutual conflicts and the general instability of life) have consequences for children (hunger, tiredness, illness, emotional instability) which impede learning. As early as at the age of three years differences have been found between children, which even the best possible education has not been able to compensate later on.

(c) Piaget and research inspired by his ideas on children's thinking and concept formation have led to a change in the traditional way of thinking in the field of developmental psychology: the levels of concept formation are not so much functions of age as functions of the quality and quantity of the information received by the child. Educational programmes have been developed on this basis. Their starting points are cognitive operations mastered by the children at different periods and offering such experiences which raise the level of cognitive operations.

(d) Bernstein has studied the differences between the educational conditions of social groups and reduced them to differences in the use of language and these further to different ways of observing and differentiating the outside world and experiences - which are acquired in early childhood on the basis of models of language usage, etc., offered by the environment. These studies have directed attention to the development and trial of different verbal enrichment programmes, and to the amount of verbal communication and to the models of verbal usage offered in pre-schools.

Research on child development has particularly inspired the planning of pre-school curricula which emphasise different formal educational objectives: the development of systematic perceptual discriminations, of the [illegible] processes of thinking, communication skills, motor skills, etc., by means of activities which can fairly freely be chosen with regard to the contents of culture, if only children's motivation to learn is taken into consideration. Traditional kindergarten curricula have emphasised to a greater extent the content matter among the objectives of education, i.e., they have sought to advance children's development by bringing them into contact with various fields of culture in a variety of ways, although not very systematically. In my opinion it is not easy to choose between formal and material objectives. Formal objectives are seemingly "value-free", but closer examination may reveal hidden values.

If pre-school curricula accord little importance to material objectives, our cultural heritage may not be transmitted adequately to the new generation. On the other hand, it has to be admitted that material objectives, attempts to transmit significant cultural heritage may lead to compulsion and discrimination against minorities even in pre-school education.

V

The above-mentioned studies on deprivation have inspired attempts to find the groups of children in society who most need the compensatory education provided by pre-school - and it is often discovered that these very groups do not receive pre-school education. One of such group consists of children, who live in the country, especially in sparsely populated areas. In large urban centres the children of many minority groups, such as the children of immigrant families, are not able to take adequate advantage of pre-school facilities.

Whilst reading certain symposium papers on pre-school education, I came across several statements on the inadequacy of pre-school education and wishes for the establishment of "universal pre-school education". My first reaction was delight at these statements, until I repeatedly discovered that the writer's "universe" never reached outside the borders of his own society What are the borders of our "universe"? We have our deprived minorities - but also a group of deprived children, which is not a minority in the world but a majority.

THE PRESENT STATE OF PRE-SCHOOL EDUCATION IN THE MEMBER STATES OF THE COUNCIL FOR CULTURAL CO-OPERATION

Tessa BLACKSTONE

There are major difficulties in making international comparisons, and they are as great for the field of pre-school education as for any other. However I should like to begin by grouping countries in terms of the degree to which they meet the social demand for pre-school education. This is high in all countries, and imperfectly met in most of them. But the degree to which this is true does vary. On this basis we may group the countries in the following way:

- France, the Netherlands, Belgium;
- Austria, the Federal Republic of Germany, Switzerland, the United Kingdom;
- Scandinavia, including Iceland;
- Turkey.

These four groups face rather different problems. In the first group the main problem is that of quality: how can pupil-teacher ratios be improved, how can the curriculum be satisfactorily developed, what kind of research and evaluation is necessary? In the third group the main problem is quantity; how can the very limited but high quality provision be expanded, at least in terms of resource use? The second group falls between these two extremes, both in terms of the proportion of the age group for which provision is made and in terms of the nature of the provision. But again the main aim is expansion without too much loss of quality. Thus, in the United Kingdom, the teachers may have to accept, however reluctantly, a change from a pupil-teacher ratio of 10 to 1 to one of 15 to 1. As one of the less developed countries of southern Europe, Turkey faces the problem of trying to establish a system of nursery education in a country where there are still difficulties in getting all children into primary schools. Thus it is possible to have pre-school education where school education is not yet universal.

Having said this, I should like to go on to some of the similarities and some of the differences in the structure and content of nursery education. It seems to me that the similarities should be stressed. There is a great deal common to all the European countries in the pre-school stage of education. In comparing the forms it takes in the different countries the following factors have to be taken into account: the relationships between the pre-primary system and the primary system; the extent of private as against public provisions; the role of central and local government in the planning and administration of pre-school education; the methods of financing it, including whether charges to users are made; the way the institutions are staffed and the status of the teachers involved; pupil-teacher ratios; the relationship between educational provision and care provision, and the role that the proportion of working mothers play; the degree to which parents are involved in the educational process; the age of the children attending and the number of hours for which they attend; the distribution of provision between rural and urban areas; the distribution of places among middle class and working class children; and the current rates of expansion.

About some of the questions, it is impossible to generalise for Europe. About others, some broad generalisations can be made. For example, few generalisations can be made about the length of the day for children in nursery schools. In some countries it is only part-time provision. In others, full-time provision is made, identical in length to that provided in the primary schools. There are also variations with respect to this within countries. The only generalisation that can be made about age is that educational provision is made for only small numbers of children under three years of age, if at all. In most countries primary education is quite separate from pre-school education and the contacts between the two systems are limited. How far central government is involved is largely dependent on how centralised the government of education as a whole is. In most countries charges to users are either non-existent or represent only a small proportion of the total costs, although it is common to make much larger charges for places in day nurseries. In all countries some supplementary

day-care provision exists, but its level of development and relation to the education system varies in part according to how extensive is the structure of educational facilities for young children. All countries staff their nursery schools primarily with trained teachers, but the status of these teachers varies according to whether they receive the same training and/or salaries as teachers in primary schools. Even where this is the case, there seems to be a tendency in all countries for teachers at the pre-school stage to feel that their status is less high than teachers of older children.

In some countries the view is taken that it is important to have a higher staff to pupils ratio with young children than with older children. However, although this is the most common view, it is not universal, and in some countries the opposite view is taken. Finally, there are two points about which generalisations can be made with confidence. In all countries, rural areas are less well provided for than urban areas. Secondly, the provision is expanding and the need for more pre-school education still is publicly debated in all countries.

Not only are the desirable level of provision and the most appropriate organisation of nursery education under discussion. The present content of nursery education is also being questioned. It has traditionally been informal and unstructured with no laid down curricula and little attempt to teach children reading, writing or arithmetic. This is broadly true of the system in all the countries discussed below, and in other countries too. The emphasis is on learning through play, on creativity, and on waiting till the child is ready to learn rather than on devising methods of getting him to learn. The aims of nursery education tend to be diffuse and sometimes ill-defined. They often place more stress on encouraging the social, physical and emotional development of the child than on his intellectual development.

Painting, modelling, drawing, and the use of other materials to make various objects or to portray images are universally a central part of the day, and possibly take up more time than anything else. This is seen as a fundamental method of getting the child to express himself and to perceive his environment. The other way through which a young child expresses himself is language, and in spite of its enormous importance as a means of expression by comparison with painting, for example, it is not until fairly recently that much explicit attention has been given to the need for language development in young children, and the role of pre-school education in promoting it. Although teachers have always spent some time in helping children to develop their speech, both in the sense of enabling the child to enunciate clearly and express himself in a grammatically correct fashion, and in developing a new vocabulary, this has not usually been systematised. Nor until recently has the role of language in cognitive development been much recognised in the sense that it has been translated into practical schemes within the classroom. Similarly, more systematic attempts are now being made to develop an awareness of the concepts of number, shape and size and the inter-relationships between parts and wholes.

Another aim of pre-school education in all European countries is the education of parents. Unique opportunities are presented for contacts with parents, since children need to be brought to school and fetched from it at this age. There is also some evidence that while the protective role of parents is still important, it is easier to involve them in the education of their children later. However, often little more than lip-service is paid to the ideal of parental education, or to the belief that parents should be involved in the education of their children and have the right to participate in decisions about their educational future. Parents are rarely given the opportunity to spend a day in the classroom and thereby gain some insight into the educational process, nor are they usually given places on the governing bodies of schools. However, it is possible that this may change as a result of spontaneous developments outside the formal education system. In some countries, notably Britain, when the shortage in the supply of nursery education has been acute, parents, in particular mothers, have gathered together to form their own play-groups as an alternative to state-run nursery schools. Although many of these groups are short of resources and inadequately equipped, they are one of the best examples of genuine community effort to fill the lacunae left by the state. In that the parents run and organise such groups themselves they gain experience which the state system

never gives them a chance to have. It is possible that this may help to give more parents the confidence needed to challenge the formal school system. Although voluntary efforts of this kind outside the established system may give rise to concern, sometimes justified, about the standards that can be achieved by people without formal qualifications, they may have other unforeseen and often unacknowledged benefits which could bring about innovation within the formal education system. The wish for parental involvement in the schools is part of a general climate on the need for participation, and redistribution, not only of wealth and income, but also of power and status.

One of the consequences of weaker role obligations in the family has been the growth of outside agencies as aids in the socialisation of the young child. The discussion on the content of nursery education indicates that pre-school provision has been more concerned with the process of socialisation, than with that of instructing the child. Although many of those directly involved, such as the teachers of young children, might not admit it, largely because they would refuse to make the distinction, the role of pre-school provision everywhere is primarily to socialise children and secondarily to educate them. The constant reiteration in every country of the nursery school's role in encouraging self-reliance, co-operation and independence is evidence of this. But evidence of a change in emphasis has also emerged.

I began by mentioning the demand for pre-school education. In this respect the similarities between countries seem greater than the differences. The pressures for expansion and changes in structure in each country are similar. Thus, the growing employment of married women is influential in Scandinavia and Britain in the drive to expand across the board, in Holland to abolish the long mid-day break, and in France to increase the number of places for two- and three-year-olds. Changing patterns of accommodation in urban areas, which make child rearing more difficult, are mentioned as another source of pressure in all the countries. The demand for pre-school education to alleviate educational deprivation due to poor home conditions is also heard more often although much less in Europe than in the United States.

It would not be sensible to dictate a universal form of pre-school education, since this should vary according to local conditions and local objectives. However, a few lessons about the optimal structure can be drawn from the survey of nursery education offered by this Symposium. First, it is clear that rising proportions of married women with children are obtaining jobs outside the home, and all governments, however reluctantly, are having to consider ways of providing for the children of working mothers, as well as for those children who cannot be cared for in their own homes for other reasons. Those children should not be placed in separate institutions outside the education system simply because the hours they need to be away from home make it more expedient. The system of day-care and nursery education should be unified, and special arrangements made for those children, who need to spend longer at school. Secondly, there are advantages in provision taking the form of nursery classes attached to primary schools rather than separate nursery schools, since this is the easiest way of forging the vital links between pre-school and primary education, which are missing in most countries today. Classes have other advantages in that they avoid what for some children can be a disruptive change of school at an age when a secure environment is of high value. Thirdly, central governments must take some responsibility for the planning and finance of pre-school education. The history of nursery education in Europe indicates that it is not enough to rely on the goodwill of local authorities to set up schools, whilst support from the government is inadequate. Nor should the public authorities rely on voluntary organisations to make places available. It is their responsibility and unless they accept this, universal provision of a high standard will not be achieved.

It is essential that the first stage of education should have well qualified staff whose status is as high as that of other teachers. Their jobs are as responsible and exacting as teachers of older children and require, in just as high a measure, qualities such as patience, judgement and intelligence. But there is a strong case for providing supporting staff to work with the teacher in the classroom, who should be trained in a shorter length of time, and whose major responsibility would be day-to-day work with the children, but who would not be expected to plan activities, assess children with social or other

handicaps, or take responsibility for communication with parents. Supporting staff of this kind would make possible an improved ratio of adults to children in the pre-schools of such countries as France and Holland, and would free the teacher for the more demanding aspects of her role.

It is important that parents and teachers should be partners in the educational process. In the late nineteenth and early twentieth centuries many schools were built like fortresses, as if designed to prevent their inmates from escaping into the outside world and the outside world from looking in or entering. For many parents schools are still forbidding places, and the formal education system does little to make them feel otherwise. One of the most important contributions nursery education can make is to break down these barriers.

With respect to the content of pre-school education, it is important that its creativity and freedom should be preserved. The child should be encouraged to develop the ability to think for himself. The stifling of creative ability by rote learning and other rigid ways of inculcating knowledge, common in many traditional school systems, have never been practised in nursery education. On the other hand, there has been a tendency to over-react to these unfortunate characteristics of the formal school system and to become so unstructured in the nursery schools that all sense of purpose is lost. It is essential that teachers of young children should have clear goals, and a clear idea of the methods by which they can attain various goals. To provide sand, water, paint, bricks, and various other materials, allowing the child to move from one to the next in the hope that this is providing a stimulating environment is not enough. Programmes can be structured without being over formal and they can allow individual children to proceed at their own rate. There is a need for such programmes, particularly in language teaching, which should cover concept development, linguistic enrichment, and speech training. Techniques used in the first year of primary schooling when teaching children number work and measurement can be adapted for use in nursery schools. Learning to read can be started more frequently than at present at the pre-school stage, without sacrificing creative self-expression, for reading should not be regarded as a passive and uncreative activity, and until the child can read there are major limitations on how much he can learn on his own.

In future it will be necessary to sponsor much more research on the education of young children. We need to know more about the fundamental processes of cognitive development, and social and emotional maturing. We also need more experimentation in the schools on what is taught and how it is taught. Our knowledge is still scanty and our methods haphazard. The growth of educational technology gives rise to many new opportunities to extend conventional approaches to teaching. The use of the mass media has hardly begun. It is also necessary to try and evaluate existing programmes more rigorously than in the past. There are major research difficulties in doing this. But it should be possible to overcome some of these. Care should be taken to avoid evaluations based solely on formal criteria, such as IQ gains, and ways must be found of measuring social and emotional maturity, learning motivation, and parental satisfaction.

To conclude, most European countries are groping towards at least some of the policies described here. But in terms of the extent of provision they lie behind countries in the Soviet bloc, where the need for women in the labour market and ideals about the equality of women have both speeded up the establishment of nursery education, and in terms of research on early childhood education, they lie behind the USA. While we fail to provide all children with the opportunity to benefit from schooling at this crucial stage in their development, we reduce the likelihood of equality of opportunity.

REPORTS ON RESEARCH INTO PRE-SCHOOL EDUCATION

PROBLEMS AND TRENDS OF RESEARCH INTO PRE-SCHOOL EDUCATION

Tapio NUMMENMAA

The desire for improved pre-school facilities seems, partly at least, to be linked to the movement for the democratisation of education. It has been observed in various countries that educational opportunities seem to depend on the social background of the student (1), this being the case at all levels of education. When research interest turned to the pre-school sector and revealed that the same social inequalities existed there, efforts were concentrated on searching for remedies.

Lowering of the school entry age has been seen as a positive step, it being felt that earlier contact with the education system would reduce some of the disadvantages caused by inadequate home background. But research into pre-school education has also aimed at developing programmes specially for those socially handicapped or disadvantaged.

Research on the effects of social background

There has been a considerate amount of research on the effects of social background on child development and educational opportunities. Generally the higher up the socio-economic scale a child's family is, the less disadvantaged he is likely to be. However, more detailed studies would seem to be needed. For instance, social status - or social class - is often used as a global variable without distinguishing different cases within each stratum. This means that we do not know exactly what sorts of behaviour are accounted for by differences in family, economic resources and which educational differences are accounted for by the differing educational backgrounds of the families. The interaction of factors of various kinds are still to be worked out.

The kind of information mentioned above is also seen as useful in dealing with situations involving multiple handicaps. The different aspects relating to disadvantage are known to accumulate, and as they all would appear to play some role, it would seem reasonable to try to work out the effects of different combinations in more detail.

The effects of social background in childhood are known to be important in some areas of development - e.g., language - but they have much less importance in non-verbal areas. In general, it would seem that cognitive development has been more researched than, let us say, motivational factors.

Of the background variables the social ones have been studied quite extensively. However, there would seem at present to be a growing interest in the effects of different physical environments.

Research on pre-school programmes

Much of the work done in the field of pre-school education has taken the form of constructing and testing various teaching programmes. Here the task of research is to help the administration to construct a curriculum and methods best suited for the child's development.

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(1) The social background of students and their chance of success at school

Paper prepared for the International Conference on Education XXXIIIrd. session, by the International Bureau of Education. ED/BIE/CONFINTED 33/3. Paris, 1971.

The details of a particular teaching programme vary according to the target population. It may be the population at large. In this case the research would seem to aim at taking into account the differences in levels of development. In this kind of work the influence of Piaget is evident. On the other hand, most of the programmes developed, particularly in the USA, seem to have some particular target population of socially handicapped children. This work thus concentrates on the compensatory idea: giving the same treatment to all means that the original inequalities remain.

The contents of the programmes vary. There are general programmes that try to tap a wide variety of behaviour patterns. In the compensatory line of work these may go under the heading of enrichment programmes - though these can be restricted to some particular aspect like language. The general programmes, however, give more weight to achieving states of readiness than in teaching particular skills. The more structured programmes aiming at specific goals often use sophisticated methods like self-instruction materials. These programmes seem to be a recent trend.

Though the more general programmes do take social behaviour into account, the emphasis still seems to be on cognitive developments. This is, of course, even more true of the academically oriented programmes.

Evaluation of the programmes

One key matter in evaluating the programmes would seem to be the selection of criterion variables. The range of criterion variables often seems rather limited. It is, of course, understandable that a programme aiming at teaching some specific skill should involve mainly measures relating to that skill, but with the more general programme one would expect to find a rich selection of variables connected with cognitive, personality, and social behaviour. Often the variables are, however, limited to a measure of IQ and some similar tests.

The criterion variable also shows something about the aims of the programme. If a researcher is using IQ as his criterion, then he presumably has been trying to boost this aspect. But it would be relevant to know what has happened in other areas. IQ indicates a certain kind of problem solving behaviour, which, of course, can be trained. But as that is possible even using a programme of narrow scope, other criterion measures would be needed to evaluate the results.

The same goes for comparisons between programmes. The general observation as to the gains from programmes seems to be that beneficial results are achieved, but that these are often observed to disappear later. Who gains and how much depends largely on the level of difficulty of the programme. But whether the gains are stable or not seems to depend on factors that are more difficult to identify. One may assume that if the results are not to disappear, the programme must boost motivation as well as some cognitive skills, and the adverse effects of the child's environment should not be too strong. In future research, the criterion measures perhaps should include observations of the child in her/his normal surroundings. For comparisons between programmes of different kinds to be meaningful, there should be a large number of different criterion measures.

Which environment to enrich?

It was remarked above that the stability of gains achieved might depend on the quality of the child's normal environment. By this it was meant that the adverse effects of the normal environment may not be easy to counter by programmes carried out in a different, and more restricted environment - nursery school or the like.

There is at least one type of study where the child's home environment is taken actively into account. These are the programmes in which the parents, the mother usually, are involved in the programme. The results obtained from programmes of this type seem to be good. Television and radio are also used in efforts to reach the child in his own environment, but it seems difficult to reach all children, and assessment presents difficulties.

Studies concerned with the possible effects of changes in the child's physical environment are rare, if they exist at all. Studies of this sort, carried out for instance in connection with urban renewal programmes, might give useful information. The emphasis could be on both social and cognitive development of the child.

The possibilities for interdisciplinary research

There is little interdisciplinary research in the field of the pre-school development of the child. Above we have commented on the possibilities for studies concerning the effects of physical environments. This would require researchers and planners to join efforts. The study of the effects of social policy would require a team including social policy, and economists, in addition to educationists, and so on. Perhaps we shall see more of this kind of research in the future. Though such research does not relate directly to pre-school education, it still would be worthwhile from the point of view of general planning.

Pre-school - general programmes and the idea of compensation

In a situation in which everybody or almost everybody has access to pre-school education, what is needed, obviously, is a general curriculum. But if one wants - as I assume - to retain the idea of compensatory education, too, special arrangements are needed. The differential treatment of children in this kind of situation requires methods of work that differ from those for handling a group consisting solely of disadvantaged children. This problem will probably attract the attention of researchers in the future.

SOME PSYCHOLOGICAL ASPECTS OF VARIOUS PRE-SCHOOL PROGRAMMES

Hans VEJLESKOV

Theories of child development as well as programmes for pre-school education are expressions of various ideas and values concerning the nature of man, the future of society, etc. Accordingly, research on child development is not a storehouse of objective facts, ready for use by parents, teachers and curriculum planners, but a rather subjective process, depending upon the ideals and interpretations of psychologists; and, furthermore, the research itself is the object for interpretations by its potential users. The psychologist has to aim at being aware of his own presuppositions and ideals as well as the practical consequences of his research and theorising.

Although he will never be fully aware of his presuppositions and the consequences of his work, in reality he faces a dilemma. Firstly, he is, as a human being, responsible for his fellow human being considered a subject. Secondly, as a scientist, he is inclined to state some general laws and theories regarding fellow human beings as objects. The developmental psychologist has received special training and has special methods for observing as well as describing (and interpreting) children and their development; he is obliged to observe and describe, and he is obliged to improve his instruments, in spite of comprehending the subjectivity mentioned above.

When one considers the influence of developmental psychology on the aims and practices of pre-school education, the subjectivity as well as the responsibility of the psychologist are quite evident. Formulations such as, "the aim of pre-school education is to advance the social development of the child", show the significance of the very concept of development. And the discussion about methodology in pre-school education illustrates the direct use of psychological research.

Psychology and pre-school education

The aim of psychology is considered to be the study of human action and consciousness, and the production of appropriate descriptions of these phenomena.

> A description always involves an interpretation, and, as far as it relates the phenomenon in question to other phenomena, it has an explanatory value.
>
> The appropriateness of the description refers to the fact that the psychologist's way of speaking reflects his philosophy, and implies some practical consequences.
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> In accordance with the tradition of Danish psychology, and European psychology as well, the objectivity and realism of psychology are not considered to be ensured by observing overt behaviour and by reducing it to physiological processes. As rediscovered in the so-called humanistic psychology in the USA, it is fruitful and realistic to consider the objective of psychology as an active, conscious subject.
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> Therefore, developmental psychology deals with the development of children's actions in the world as well as their cognition of the world.
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> In order to be of relevance for pre-school education the description of the child's development must, to a certain degree, be "interventionalistic", i.e., the psychologist must study and describe the development in terms of environmental influences, and consider the possibilities parents, nurses, and pre-school teachers have for changing the development.

The term "pre-school" in a broad sense means all rearing, influencing, and education affecting the child before his entrance into the school system usually called "compulsory", suggesting a more voluntary, informal, and random character for pre-school education. Evidently, the point of view reflected here is one of society. For the child, training in social habits and attendance at a day-care home, a kindergarten, or a nursery school may be just as compulsory, and this may also be the case for his parents. Even so, the activities of the child at home and in day-care institutions are more dependent upon his own interests and his private experiences of meaningfulness than are ordinary school activities, which to a higher degree are directed from without. So, in the voluntary pre-school classes for six-year-old children in Denmark, it has been forbidden to introduce "teaching" in the sense of elementary instruction in the first and second grades.

In a narrower sense the term "pre-school education" may be taken to denote institutional and planned education of children in the first six years of their lives. This makes it more meaningful to discuss the aims and curricula of pre-school education, but, on the other hand, it implies the danger of overlooking the fact that many children do not attend pre-school institution.

In addition, in this narrower sense, pre-school may be further limited to signify compensatory education of culturally deprived children, which also may result in neglecting a majority of children as well as overlooking the importance of children's daily life and home experiences. The experimental carrying out of such compensatory educational programmes perhaps draws a veil over the social inequalities in the community as well as the unsuccessful elementary instruction of its schools. As indicated by the doubtful benefits reported from several special training programmes for culturally deprived children, and as discussed recently by Basil Bernstein (1), compensatory pre-school education may be regarded as a questionable arrangement, both with respect to demonstrated long-term effects and from the point of view of a psychological or sociological theory.

Regarding pre-school education the following points will be kept in mind throughout the following discussion:

> The distinction between, on the one hand, pre-school education as the general effort on the part of grown-up people to educate younger children, an education regarded as being of value in itself - and, on the other hand, as institutional education leading to school readiness;
>
> The distinction between, on the one hand, pre-school education as the education of all children - and, on the other hand, as the education of special groups of children.

It must be added that the above comments on psychology as a subjective discipline and the comments on compensatory pre-school education as involving the danger of neglecting social problems do not in the least mean that psychology is only a matter of policy, or that any discussion on pre-school education has to wait for revolutionary changes in the community. On the contrary, it is taken for granted that pre-school programmes are, to some extent, based upon psychological descriptions, and that they can be discussed and compared from the point of view of developmental psychology.

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(1) In Rubinstein, D. and Stoneman, C. (eds.): Education for Democracy. Harmondsworth: Penguin 1970

Attempting to take psychological descriptions of child development into account, the following sections deal with some aspects of a few programmes. It is considered that the task for psychologists is to help planners, teachers and parents to describe the aims, the methods, and the activities of pre-school education. Consequently, it seems relevant not only to discuss pre-school education in terms of psychology, but also to discuss psychology in terms of pre-school education.

A programme for the majority of pre-school children (Sweden)

The 1971 Swedish report on pre-school education (1) discusses the contents and methods of pre-school education in general, considering day-care homes as well as nursery schools, and the education of children staying at an institution all day as well as the education of those staying there three, four or five hours per day.

The aims of pre-school education are formulated as follows:

> "The pre-school ought to attempt, in collaboration with the parents, at creating the best possible conditions for the child to develop and utilise his emotional and cognitive predispositions. In this way the pre-school can lay the groundwork for the development of the child into an open and thoughtful human being, who is able to evaluate and think independently, and who appreciates co-operating with others. The pre-school ought to stimulate the child seeking knowledge and make use of this to improve not only his own conditions of life, but also others'." (p. 26)

This formulation contains some considerations of a psychological nature: collaboration with the parents is regarded as valuable, and the hypothesis that certain conditions affect the emotional and cognitive development so that the child becomes social, inquiring and open is set forth.

Our impression of the influence of psychological considerations is strengthened by the following three aims derived from the principal one quoted above:

> "The pre-school and the parents shall jointly create such conditions that:
>
> 1. the child develops and stabilises a conception of himself as an individual. This is the basis for the child later being able to collaborate with others;
> 2. the child develops communication skill in his interaction with the environment. Gradually, the child ought to recognise his innate means of expression, and to make use of them in word, sound, movement, and picture;
> 3. an appropriate concept formation develops in the child, so that he understands basic concepts and simple system relations before his entrance into school. This does not mean that the child first of all obtains knowledge, but that he learns how to learn ...." (pp. 28-29)

Each of these derived purposes draws attention to one of the directions of modern developmental psychology: namely, the psychoanalytic approach, the social psychological approach, and the cognitive approach, respectively. This is further stressed by the fact that the report discusses and gives a summary of E.H. Erikson's and of J. Piaget's theories of development.

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(1) Innehåll och metoder i förskoleverksamheten. Göteborg, 1971.

With respect to the report's conceptions of development and education, the chapter on concept formation and communication appears very essential. In accordance with J. S. Bruner's theory, a concept is defined in terms of classification and veridicality, i.e., a concept is regarded as a means for clearness and categorising, and the individual concept may be a more or less correct representation of reality. The report also mentions learning by discovery:

> "This method involves that the child himself discovers new concepts and, as time goes on, performs abstractions and generalisations." (p. 100)

It is stressed that the pre-school shall not give traditional instruction on concepts, but facilitate discovery by presenting situations that are meaningful to the child, by encouraging the child, and by establishing a stimulating environment with grown-up people asking and answering questions, presenting new objects, etc.

Communication is defined as the production, transmission, and reception of information, and the report draws attention to the fact that the role of a receiver is more exacting than the role of a sender, both with regard to social and intellectual development. It is held that the great interest taken in the process of creative activity meant that the traditional pre-school overlooked the significance of the creative product as an expression or a communication to be answered. Thus, the report does not keep to language, but also regards play, painting, gesture and sound as means for communication to be acquired through activity.

The report (p. 108) holds that communication is one of serveral processes which are of relevance to concept formation; namely, the processes of observing, describing, categorising, measuring, and communicating. The first of these processes is regarded as a basic and principal one, while the last one is regarded as basic with respect to information procurement.

As an instance of the formation of a fundamental concept by pre-school children, the report mentions the concept of "system" in biology:

> "The principle is that the child himself directs his learning situation; however, the word 'teaching' is always legitimate, since the aim of the teacher is to create a situation so that the child himself makes continuous interpretations of reality." (p. 120)

With respect to language training, the report (Annex 3) suggests that rather than being a particular subject in the pre-school, it should be integrated into the total educational picture. Although the importance of language to intellectual and social development is stressed, and although the language deficiency of culturally deprived children is compared to that of deaf children, no attempt is made to set forth a programme for language training.

We shall not go into further detail, for example, regarding the interpretations of the Geneva school and the Harvard school, respectively, but set forth some questions that the report gives rise to.

1. The report may be regarded as an attempt to establish a compromise between socialisation and intellectualisation, as well as a compromise between traditional pre-school education, which stresses maturation, and modern pre-school education which stresses learning.

- Is any theory of child development able to explain to planners, teachers, and parents the significance or insignificance of a given activity for the social or intellectual development of the child?

- Is any theory able to explain the effect of discovery vs. training?

2. As mentioned before, the report gives a summary of E.H. Erikson's and J. Piaget's theories. Although these theories are in agreement with regard to the concepts of phase and adaptation, it is difficult to see how they can function as a basis for one common description of development, both social and cognitive.

- Are these theories able to inform teachers or parents about situations or teaching which are challenging, but not frustrating, for different age groups?

- Are they interventionalistic as regards the role of grown-up people, whose reactions, intentions, and attitudes are of great relevance to the development of identity, social attitudes and a conception of the world?

- Are they inclined to describe hypothetic processes rather than children's daily experiences and grown-up peoples understanding of them?

3. The suggested uncertainty as regards socialisation vs. intellectualism, as well as the inclination to introduce hypothetic processes foreign to the way children's behaviour is discussed by nurses and teachers, are illustrated in the chapter on concept formation and communication. Communication with others clearly is a process which refers both to social and cognitive development, and "language and thought" is an old theme in child psychology. Yet it seems very difficult to express, in a fairly balanced manner, the symbolic, the social, and the informative aspects of language.

- Is child psychology confused with regard to these problems?

- Is it inappropriate to regard concepts as given phenomena to be acquired instead of considering the individual child's actual conception of a thing or a relationship?

- Is it necessary to make a choice between the theory of Piaget and that of Bruner, contrary to the report which implicitly makes a junction between them?

- Is it especially appropriate to make the Piagetian distinction (1) between, on the one hand, symbolic representation or expression and, on the other, operative cognition or knowing?

A compensatory programme for deprived children (USA)

Most of the experimental programmes concerning pre-school education deal with compensatory education of disadvantaged children, and the Bereiter-Engelmann programme may be taken as an example of such a programme. However, it must be stressed that it is not typical, and that it is doubtful whether "typical" instances exist.

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(1) Furth, H.G.: Piaget and knowledge - theoretical foundations. Englewood Cliffs (N.J.): Prentice Hall, 1966

The basis for their programme (1) is a very simple statement about so-called "enrichment programmes":

> "The basic fallacy behind the enrichment strategy is the idea that since privileged children learn what they do from certain experiences, disadvantaged children must learn from the same kinds of experiences. If this assumption were true, there would be no hope of speeding up the learning of disadvantaged children enough so that they could overcome their relative backwardness. If disadvantaged children are to learn at faster than the normal rate, they are going to have to learn from experiences of some other kind than those that have been responsible for the learning of more privileged children - experiences that are more potent generators of significant learning, experiences of a kind that can be compressed into a small period of time without losing their effectiveness." (p. 9-10)

Furthermore, cultural deprivation is mainly regarded as language deprivation. Comparisons with sensory deprivation are viewed as misleading, since they only study the quantitative aspects of stimulations and do not take the educational quality of the available stimuli into account. Pointing out the significant difference between the intellectual deficiency of blind and deaf children, Bereiter and Engelmann also question the adequacy of concrete experience emphasised by Montessori, Piaget, and Hunt. Instead, they accentuate the significance of language, referring to the sociolingustic theory of Bernstein and the observations on lower class mothers' verbal teaching by Hess (2).

Language is considered to be a virtual necessity with respect to the transmission of knowledge and the performance of certain operations with concepts, while it is not regarded as a necessity with respect to social interaction and self-expression. Although intensive studies remain to be carried out, it is held that the language of culturally deprived children is deficient especially with regard to certain uses of language, namely:

- obtaining and transmitting information,
- monitoring one's own behaviour,
- carrying on verbal reasoning.

Furthermore, it is held that these deficiencies follow from at least two linguistic characteristics, namely:

- treating sentences as "giant words" that cannot be taken apart and recombined. (This characteristic of children's language is described by Heinz Werner as holophrasic language.)
- failing to use structural words and inflections necessary for the expression and manipulation of logical relationships. (This characteristic is described by Roger Brown and others in investigations on sentence structure in young children's spoken language.)

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(1) Bereiter, C. and Engelmann, S.: Teaching disadvantaged children in the pre-school. Englewood Cliffs (N.J.): Prentice Hall, 1966.

(2) Hess, R.D. and Bear, R.M. (eds.): Early education - Conference on pre-school education, Chicago 1966. (Papers presented at the Conference and sponsored by the Committee on learning and the educational process of the Social science research council). Chicago: Aldine Publishing Co., 1968.

In accordance with these formulations, Bereiter and Engelmann (pp. 48-49) advance a list of minimum goals for compensatory pre-school education, mostly in terms of verbal behaviour, as for instance:

- ability to use both affirmative and negative sentences in reply to the question "What is this?"
- ability to count objects correctly up to ten
- ability to recognise and name the vowels and at least 15 consonants.

The total of 15 such goals is said to represent the authors' best judgment as to what is necessary for a child to enter the first grade with a reasonable chance of avoiding a defeat. Although it is desirable to state educational goals in an operationalistic manner, and although the goals listed immediately appear quite reasonable, it is difficult to realise that precisely these are the ones which are derivable from the preceding considerations on language deprivation.

With regard to the teaching method used to achieve the various goals, Bereiter and Engelmann prefer direct instruction to "verbal bombardment" because of their personal experience with such teaching, and because they found that only programmes which differ radically from the traditional method of nursery schools are able to demonstrate significant increases of IQ. Discussing the possible negative effects of such a direct short-term training procedure (pp. 57-63), the authors do not regard them as real dangers for the children in question. This point of view agrees with their initial comments on social and emotional deprivation (p. 40), ending in their rejection of hypotheses that stress social maladjustment as an aspect of cultural deprivation.

Without going into further detail (1) and leaving the demonstrated effects in terms of gains in various test scores out of account, the programme as mentioned till now raises some questions concerning more or less implicit conceptions of developmental psychology, corresponding to the questions in the preceding section.

1. This programme does not attempt at any compromise between socialisation and intellectualisation. However, it is very hard to understand the total neglect of the social aspects of development in these culturally disadvantaged children, who have to encounter teachers and schoolmates in a rather complex situation. Furthermore, the effects of verbal training referred to neither explain the process going on, nor the relation between the short training periods and the daily life of the children.

2. This programme is highly interventionalistic, and very tangible and concrete in its description of learning situations. But it is addressed to skilled teachers, and although many of the exercises mentioned in connection with the various subjects are like those parents play with their children, it is in reality a series of special training programmes. Is it possible for child psychology to throw light on the situation of such children so that the relevance of the statement that they have to learn faster by means of special experiences can be illustrated?

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(1) The programme is described in detail by Bereiter and Engelmann themselves (1966) and also by e.g., Pines, M. Revolution in learning: the years from birth to five. New York: Harper & Row, 1967

3. As regards concept formation and communication, this programme considers only language, and, furthermore, it only considers the aspect of information and logical reasoning. Is it possible for child psychology to describe the process of language acquisition in a way that admits of training so different from the "natural" learning of vocabulary and syntax?

Is it right to overlook the aspects of expression and communication as well as those of other means for symbolisation and expression?

Is the apparent possibility of neglecting concrete experience explainable?

A programme for "ordinary" children's adaptation to the school situation (Denmark)

The last programme to be mentioned is a Danish one, representative of a general tendency in Denmark to avoid the use of various tests for school readiness. In the long run, the establishment of pre-school classes for all five to six-year-old children will probably be the general solution to the problem of how to facilitate the mutual adaptation of the child and the school, since, as in Norway and Sweden, there is a strong tendency toward an "integrating school" meeting the needs of all children without carrying out any selection. However, the establishment of these classes has had an experimental and voluntary character until now, and some of them have been carried out as educational action research.

In the municipality of Birkerød, north of Copenhagen, the aim of the programme for such pre-school classes was to affect the teaching in grades 1 and 2 by:

- providing information about the individual children from homes, nursery schools and pre-school teachers,
- establishing a close contact between the school and the homes of the children
- making precise diagnoses for the few children who seem to be unable to begin ordinary school the following year.

For children who cannot join a pre-school class a "play school" is arranged two hours per day for two weeks, so that they have the opportunity to meet the school in the same way as those in the classes, since the activities they take part in are identical. They consist of ordinary nursery school activities; the children are given ordinary materials; they play individually or take part in planned group play; they are told stories and meet the other children in the school in the breaks. The idea is that the establishment of such classes entails:

- that the children's expectations are supported and their anxiety reduced by means of their concrete experiences;
- that the teacher's attitude toward the children becomes flexible because of the background material provided, and through contact with the pre-school teacher.

Although the concept of school readiness is regarded as inappropriate, the project regards some children as unable to begin ordinary school. However, the selection is carried out so early that, in reality, these children are admitted to grade 1, but given special elementary instruction at once. These children are the only ones to be tested psychologically.

This short description may be sufficient to illustrate the character of this programme, and to explain the following points:

1. The programme stresses the children's familiarity with the school as well as the teacher's knowledge about the individual child. However, it is natural to question whether the rather traditional nursery school activities really make the children familiar with the school as a place where teaching is going on. Correspondingly, it may be questioned, whether the observation of the children playing, etc., actually provides information relevant for the teacher's teaching in grade 1.

2. The programme is interventionalistic in the sense of being concerned with consequences for the teaching in grade 1. However, nothing is specified with regard to how to teach a child with a certain home background, a certain attitude toward playmates, a certain capability of communication, etc. The only psychological variables mentioned are the children's expectations and their anxiety, which are regarded as being significant with respect to their adaptation to the school. On the other hand, it should be mentioned that the programme also takes the school's adaptation to the children into account, and that the importance of their home background is appreciated.

Discussion

Until now the questions raised have mainly dealt with problems of psychology with respect to appropriate descriptions, and with respect to adequate popularisation for parents and teachers. But of course, the very presentation of just these three programmes calls for a discussion on the aims and methods of pre-school education.

First and foremost it is questionable whether the concept of "cultural deprivation" and the serious attempts at equalising the great social inequalities can in themselves explain such considerable differences as those between the Scandinavian programmes and the American programme. There seem to be fundamental differences with regard to at least the following points:

- the relation between pre-school education and teaching in the school,
- the necessity of taking the child's whole situation as well as his total "natural" way of acting and experiencing into account,
- the relevance of direct or indirect intervention on the part of grown-up people to direct or speed up the development.

In principle, the three points are mutually independent, and the three programmes mentioned suggest that they are in practice, too. In any case, the attitude to each of the three points is partly dependent upon one's psychological conception of development, and, furthermore, it has consequences with respect to one's utilisation of developmental psychology, i.e., the questions one addresses to psychologists.

As regards teaching, it is interesting that only a few psychologists describe this process, whereas the process of learning is mentioned very often in connection with pre-school education. The education in ordinary schools may be regarded as different from ordinary nursery school education with regard to the perspective. The principal aims of the school always contain some special considerations about attitudes, knowledge, and performance valuable for grown-up people, and, as early as in grade 1, models of language and mathematics are introduced as meaningful with respect to future activities. Two approaches immediately appear possible as regards the conflict between this fact and the fact of pre-school children's ordinary "free" activity usually being regarded as meangingful in itself: Either one tries to conform the school activities to the children, so that teaching is out of the question, or one tries to adapt the children to the situation of elementary instruction. Both of these approaches may be more or less extensive with regard to the number of aspects of children's development taken into account, and they may intervene more or less directly.

But it would be quite interesting to analyse the process of being taught, including, among other things, attention, activity level, and curiosity in the child, as well as the role of the teacher and the importance of the family of the child as emotional-social factors of great relevance for the benefits of education (1). However, the principal questions would be, how children act and experience when being taught, what they expect from teaching, and how they evaluate what is going on and what they are doing.

Perhaps it would be of relevance to compare this situation with the process of playing. It is often stressed that play is not opposed to "work", but only to "labour" (2), and that younger children's symbolic play is not identical with either creativity or an unhealthy disregard for reality. However, a description of the child's conception of himself and others as participants in play and teaching, respectively, could be informative with respect to the different views concerning pre-school education and elementary instruction in the school as well as to the significance and characteristics of the syndrome of "cultural deprivation". This approach could reduce the not infrequent tendency of psychologists to regard children as objects for learning by means of direct instruction or as objects for incorporation of the correct concepts by means of ingeniously arranged situations.

Two problems mentioned in the preceding sections call for further discussion; namely, the role of speech and the role of concrete experience. Stressing the importance of concrete experience may be regarded as an attempt to take the child's "natural" way of acting and experiencing into account, whereas the stressing of language learning may be regarded as an attempt to make the children ready for school by improving the necessary tools of language. On the other hand, both language and concrete experience may be the object of more or less direct intervention on the part of the teacher.

Language and concrete experience by no means need to be regarded as being opposed to each other. By observing the child's spontaneous use of language, it appears that language is as "natural" as concrete experience, and that language is used in connection with concrete experiences. According to Basil Bernstein (3), some children are oriented toward particularistic, context-bound meanings, whereas most children at the age of five or six years are also oriented toward universalistic meanings which the school is inclined to demand realised linguistically. The so-called "restricted code" of some social groups of children means ..." that there is a restriction on the contexts and on the conditions which will orient the child to universalistic orders of meaning and to making those linguistic choices through which such meanings are realised and so made public." (p. 118). Thus this kind of language is regarded as a matter of choice, since these children are inclined to choose a highly context-specific linguistic expression. This description raises at least three points:

- the restricted code of culturally disadvantaged children is not identical with their being linguistically deprived in a technical sense;
- the performance of an utterance may be regarded as an act of choice;
- the presence of concrete objects need not involve the choice of a context-bound utterance, since it is possible, as well as desirable, to describe an object or a situation for later personal use (e.g., in writing) or in such a manner that makes it understandable for other people who were not present.

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(1) Mentioned by Eleanor E. Maccoby in Hess & Bear; Op. Cit.

(2) Cf. L. Kohlberg's article in Hess & Bear; Op. Cit. and also an article on play by Åse Gruda Skard, presented at the Scandinavian seminar on pre-school education in Norway, Oct. 1971

(3) In Rubinstein, D. & Stoneman, C. (eds.): Education for Democracy. Harmondsworth, Penguin, 1970

Another problem mentioned in an earlier section is that of language as a presupposition of logical reasoning. In connection with the remarks mentioned above, it is natural to ask the question whether the crux of the matter is the capability of expressing certain designations and certain terms or phrases, or whether it is the inclination to choose rather context-free, linguistic expression. For instance, the question could be illustrated by experiments where children were asked why they chose to talk (or write) in that particular manner when confronted with certain situations.

In any case, the problem of language and logical reasoning is important as well as difficult. Perhaps the difficulty is partly due to the fact that to grown-up people logic is a specific and very precise language, and perhaps the difficulty could be eliminated to some extent by studying the relationship between the capability of making linguistic choices (as well as choices between other means of expression) and the manner in which the child (operationally) cognises objects and situations.

With respect to language, it remains to be mentioned that also in connection with pre-school education it might be fruitful not to consider only language production (or expressive language), as usually done in psycholinguistics. So many facts show that the impressive language function precedes the expressive one, and, therefore, it is natural to pay attention to children's reception and understanding of language, both with regard to communication, instruction and reasoning. Furthermore, the reception of linguistic expressions may also be described in terms of activity and in terms of choice of interpretation.

In this discussion pre-school education has mainly been mentioned in the sense of education leading to school readiness. However, this fact does not mean that school readiness is regarded as the principal aim of pre-school education. On the contrary, a very broad set of aims for pre-school education as in the Swedish report is preferred, corresponding to the suggested appropriateness of psychological descriptions which take the child's whole situation into account.

Summary

On the basis of three pre-school programmes which are extremely different with regard to aims and content, some questions are raised concerning the value of current theories of child development as well as about the points of view of the programmes with respect to their conceptions of development and of children's activity, learning, concepts, language, etc. The inclination to ask questions rather than propose solutions also appears in the discussion, where the possibility of describing the process of being taught and the process of being engaged in play, respectively, is suggested as a way of studying children as conscious, interacting beings. Furthermore, some problems regarding language, concrete experience and logical reasoning are touched on, suggesting that it might be fruitful to consider children's linguistic expressions as a result of choosing one of several possible expressions.

THE INFLUENCE OF RESEARCH INTO COGNITIVE DEVELOPMENT ON CURRENT TRENDS IN PRE-SCHOOL EDUCATION

Germaine DUPARC

I

Background to the problem

With the present extension of child psychology - demonstrating the crucial importance of the first stages of cognitive development and throwing new light on the role of pre-school education - we are entitled to ask what influence research exerts on present trends in such education. Is it inspiring radical reform? Is it creating new educational theory?

Before taking stock of the situation, a preliminary observation is necessary: for more than a century now, pre-school education has been the focal point of empirical research and fundamental discoveries (the rejection of verbalism, the prime value attached to activity play and manipulation, the progressive individualisation of teaching, the creation of means for self-education, etc.).

But it is difficult to stay at the forefront of educational progress for a long time and to maintain that lead. It is difficult to go on reforming, when one has been at the root of the major reforms in contemporary educational theory.

This is a measure of the difficulty of the task facing psychological research, operating after the event, not as an inspiration but as an impartial judge corroborating or invalidating, as the case may be, the experiments conducted by educators and explaining the reasons for them. So this kind of research sometimes appears to approve, sometimes to criticise and correct and, more rarely, to open up new educational approaches. Hence certain curbs, certain restraints and certain limitations on the influence of a psychological method applied late in the day as a check on the soundness of empirical educational methods.

Nevertheless the influence of psychological research is real. It is reflected not in a revolution but in evolution in pre-school education.

What are the main lines of this evolution? What are the curbs and limitations on the influence of studies of cognitive development? In order to answer these two questions, a brief survey of research in this field is necessary.

II

Research, its influence and the limits to that influence

A. Survey of research

Revelation of the crucial importance of the early years in the child's life as a result of fundamental discoveries in genetic psychology:

- As intelligence is a structuring activity, in a constant state of balance between assimilation and accommodation (Piaget), it is built up from the child's experience and passes through well-defined phases.

- Hence the vital importance of the pre-operational period which precedes reflective intelligence, and hence the need for the child to be able to act on the things surrounding him and to manipulate and experiment freely.

- It is therefore essential that the child should find the nourishment his brain needs in an environment which favours this free experimentation, which respects the stages in his development, understands the underlying value of his play and facilities his integration into society by helping him break out from his self-centredness.

Failure to fulfil these essential conditions leads to deficiencies whose repercussions on the child's mental development are only too familiar.

- The influence of this socio-cultural environment is increasingly evident.

- The problem of initial equality of opportunity is of current concern to psychological and sociological research.

- It is for educators to find a solution to this problem.

Research results throw fresh light on pre-school education, which is growing in importance.

- In normal circumstances pre-school education contributes to the full flowering of the child's mental development by supplementing the beneficial, but too often fragmentary, influence of the family. Both from the cognitive point of view and from that of integration into society, pre-school education is complementary to the education received in the family circle.

- In the unfavourable circumstances, which too often leave deep marks on the lives of present-day children, pre-school establishments would appear to be not only valuable but indispensable. The education they provide is not complementary but compensatory in such cases.

- In either case such establishments are becoming more and more necessary, both socially and psychologically.

B. What influence does research have on pre-school education?

Sometimes this influence seems to offer approval, and sometimes criticism and correction; but it is rarer for it to open up new educational approaches.

Approval and scientific justification of empirical successes achieved prior to research:

- The rejection of the verbalist approach, the importance attached to activity and the essential value of play (demonstrated by Froebel);

- Unrestricted manipulation of self-educative material, respect for individual development (Montessori, Audemars, Lafendel); spontaneous use of the child's discoveries (R. and C. Agazzi); "education by and for life" (Decroly); study of the environment, contact with nature (Freinet).

- All these discoveries of empirical educational theory have been explained and endorsed by developmental psychology; this approval is a powerful lever, a genuine stimulus to educators, who also need an educational method which offers encouragement.

Critical examination and rectification of errors

Within the well-defined context of the methods which existed prior to research, the critical examination of genetic psychology has not triggered off any fundamental reforms, but its influence has been reflected in refinements and improvements both in the structure and content of pre-school education and in the training of teachers.

- In the case of structures, a general tendency towards the better adaptation of programmes to the child's level of development is apparent. There is a pronounced trend towards a decrease in numbers, to the benefit of group work and individual teaching. Nursery schools are being planned, and playgrounds organised, increasingly in accordance with the child's psychological needs.

- As for methods and content, substantial modifications are helping to iron out the differences between them. More and more room is being given to creativity in all its forms, which is taking the place of controlled activities. Play is regaining its true symbolic significance as a serious, maturing activity expressing an inner attitude, not a childish amusement devised by adults. There is, therefore, a general tendency to go beyond methods in the strict sense, to respect them in the spirit rather than in the letter; there is a general move forward towards a genuinely active type of school.

- In the sphere of teacher training, more and more emphasis is being placed on developmental psychology (often accompanied by research conducted by students themselves). This new emphasis represents an improvement in the standard of studies. It is an incentive to continued training. It is increasingly in evidence at conferences and symposia and in further training courses.

The opening up of new educational approaches

It is in the child's study of number and logic that genetic psychology opens up new approaches to education, bringing with it the search for new teaching processes.

Studies on the origin of number (Piaget), in happy conjunction with the research done by the Bourbaki school, are leading to a complete reshaping of the teaching of mathematics.

- The resultant set theory is not only giving the now familiar stimulus to modern mathematics but is introducing a form of logical and mathematical reasoning which is breathing a new spirit into all classroom activities; this begins in the pre-operational period represented by pre-school education.

- Teaching material is also being transformed. This is reflected in the gradual disappearance of old-style educational games, which are giving way to free manipulation of multi-purpose material. A curious tendency is emerging at the forefront of this reform: the experimental material used in the course of genetic psychology tests is coming to form part of the life of the classroom. But what contribution can such material make without motivation?

- Experiments are currently under way in the field of audio-visual aids (schools television). Can the child's range of activities really be enlarged by such means without falling back into the intuitive teaching approach?

Why is it that, apart from these highly important new approaches, developmental psychology has not brought more radical educational reforms with it? The influence of research appears to be subject to limitations, and it is important to examine their causes.

C. The limitations and their causes

Limitations inherent in the nature of the problem, according to whether it is envisaged by the teacher or the psychologist:

- The psychologist's approach to the child is strangely different from that of the teacher. The former sees the child in the context of his longitudinal development and compares his behaviour against an abstract statistical pattern, in which the various stages of mental and general development are mapped out. The latter sees both the individual child and the other children - each of the others being, for his purposes, a child whom he must follow and observe. He can never upset the balance of his triangular relationship, and he has to take account of the mental level of each individual.

- The psychologist, in his approach to the child, introduces the principle of scientific doubt which is inherent in his working method, whereas the teacher applies a method based on approval and encouragement which is a marvellous spur to interest and effort. Admittedly, the teacher must all the time be able to use the precise, controlled study pursued by the psychologist; but he cannot take his place, for as as soon as he attempts to do so he moves away from the set of circumstances which makes him a teacher. Conversely, the psychologist whose attention is increasingly turned towards fundamental research moves away from the realities of practical education.

  What we have here, in fact, are two different options which must remain complementary. But the language of contemporary psychology, which is too often a closed book to the layman, makes it difficult for research findings to be communicated to the teacher who needs to grasp and assimilate them.

- It must also be remembered that the child himself differs greatly according to whether he is in a psychological test situation or in a normal, motivating, educational situation and this fact may to some extent affect the prognosis of the psychologist.

Limitations due to the singularly conservative attitudes of adults to educational progress:

- Parents and adults generally, are too often disturbed by and sceptical about any educational innovation. They like to be able to recognise their own childhood in their childrens' school activities. But everything that is new in education, however sound the psychological evidence for it, deprives them of a point of reference to their own past experience and takes away the security they feel in the handing down of their knowledge. Such reference to the past is very deceptive, for we know how subjective and defective our memories are. There is only one area of educational reform which generally receives parental approval - early learning and rapid teaching techniques (reading at three, for example). "Getting on faster" is, unfortunately, for many people the hallmark of all educational progress.

- For the same reasons, the authorities which decide on curricula are hesitant and cautious in introducing any innovation, and they share the same distaste for slow methods and the same admiration for early learning.

- Another point which may be mentioned is how all too often young teachers trained in the study of developmental psychology and won over to the advances represented by modern educational methods, have their enthusiasm gradually damped by older colleagues who view it with a sceptical smile as the zeal of the newly converted, though their smile in fact conceals a vaguely felt fear of comparison. Awareness of that fear and understanding of the underlying reasons for it would make it possible to prevent both the dispute between old and new and the regrettable loss of ardour.

Limitations due to social and cultural factors:

- It is a strange paradox to see the school, which is becoming increasingly active, attended by children made more and more passive by growing automation and the artificial presences (radio and television) which are increasingly replacing the living presence of the family circle. The child accustomed to these artificial presences defends himself against the aggression of sound and picture by hearing without listening and by looking without seeing. He is constantly being subjected to indiscriminate information which as often as not is beyond his level of development. Is all this information unconsciously stored until the day when the requisite degree of understanding is reached and it can be assimilated? Or does it take the edge for ever off the child's deep-seated interest by making him feel that he has seen and heard it all before?

- The repercussions of emotional and intellectual deprivation on the mental development of socially underprivileged children are all too familiar. The very great efforts made by psychologists and educationalists to reduce this deprivation by compensatory education are also well known.

- But, the poverty of the rich child who is surfeited with toys can never be emphasised enough. The notion of underprivileged children needs to be reconsidered, for a child can be underprivileged both by deprivation and by over-abundance, and pre-school education must be able both to compensate and to disintoxicate. But such action cannot have lasting results unless the family feels involved in a joint effort. Although activity oriented schools are increasingly influenced by genetic psychology, the beneficial effects of that influence are to some degree hampered and delayed by the unfavourable social and cultural factors mentioned above.

III

Though studies on the cognitive development of the child have not triggered off any fundamental reform of the structures or content of pre-school education, it is nonetheless to their great credit that they have brought the need for research and the importance of continuous training home to those who educate small children. In other words, these studies have had a real influence, which has led not to a revolution but to evolution. If there are curbs and limitations on this influence, it is important to realise what they are in order to overcome them. It is, therefore, important to establish increasingly close links between parents, psychologists and educationalists for the sake of the children who live in this too rapidly changing world.

As long ago as 1923, Mina Audemars and Louise Lafendel, who founded the "Maison des Petits" of the Institute of Educational Science in Geneva, wrote:

> "An educator really worthy of the name must be lively, enthusiastic and free of personal and piecemeal, preconceived ideas. She will have the essential qualities of an enquiring, exploring, experimenting mind; in all circumstances she will be guided by love and respect for the child. She will not let herself be dominated or enslaved by any method, she will not stick to the moribund letter, but to the invigorating spirit. The laws of child psychology will dictate to her the laws of teacher psychology" (1).

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(1) Audemars, M.; Lafendel, L.: La Maison des Petits de l'Institut J.J. Rousseau. Neuchâtel & Paris, Ed. Delachaux et Niestlé, 1923, p. 31.

FRANCE - THE ORGANISATION OF RESEARCH INTO PRE-SCHOOL EDUCATION

Madeleine ABBADIE

Pre-school education in France is under the Ministry of Education. The great majority of schools are State-run or privately run "sous contrat" (i.e. State recognised and subsidised). There are also a small number of kindergartens under the Ministry of Health.

In State-run nursery schools and infant classes there are, at present: 2,000,000 children of all social backgrounds out of the total of 3,200,000 French children aged from 2 to 6 years. These children are taught by some 50,000 nursery school teachers, who have the same academic qualifications (the 'baccalauréat') and teacher training as primary school teachers.

State-run schools are open, free of charge, to all children, whatever their social origin. The Ministry of Education bears the cost of teaching staff (training - pay), and local authorities bear building, upkeep and maintenance costs.

The French nursery school is descended from the establishments founded throughout the 19th century (1770-1887) purely for child minding purposes. These establishments were brought under the Ministry of Education in 1887 and became institutions of preliminary education. Child minding was later supplemented by an educational programme, the initial idea of the promoters at the end of the last and the beginning of this century being to provide a curriculum similar to that in primary schools, but with subject matter more in keeping with the age of children at nursery school.

Gradually, however, the influence of child psychologists, geneticists and educational theorists from France and many other countries began to make itself felt in French nusery schools. It was observed that the young child under 6 or 7 years of age was not just a budding primary school child, but had his own characteristic laws of development, abilities, interests and needs. Nursery school education then began to develop along its own specific lines as recognised today. A brief survey calls up the names of the French psychologists Binet, Bourjade, Wallon, and Zazzo, to take only the best known, and, from other countries, the psychologists Claparède, Decroly, Piaget, Gesell, Termann, Goodenough, and the educational theorists Froebel, Pestalozzi, Montessori, Kergomard, Freinet and many others, whose work is still a source of inspiration.

General distribution of ideas and practice is achieved through the administrative channels of the French Ministry of Education. Establishments of pre-school education are run and advised at local level by specialised inspectors, with at least one per "département", at present 150 inspectors for the whole of France. The educational function of these inspectors is to visit classes, give the necessary advice, encourage the practices best suited to the aims of pre-school education, help spread ideas and methods, improve methods used, in other words to provide continuous training for teaching staff.

Teaching staff at all French nursery schools are provided with educational periodicals designed to supply information on the most interesting features of nursery school education. There are also annual national conferences for joint deliberation by nursery school teachers, inspectors and specialists in matters relating to children of nursery school age.

French nursery schools do not work in isolation, and are not cut off from psychological and educational research. Such research is very much alive in France. Every university has its faculties of arts, psychology and social sciences and its research teams, and there are also specific national bodies, such as the National Scientific Research Centre (Centre national de la Recherche scientifique), which gives us a good deal to work on.

Some time ago, a specialised institute, the National Institute of Education (Institut pédagogique national) set up an educational research section in conjunction with the Ministry of Education, which has a department of teaching methods (Direction de la pédagogie). This institution was transformed by Ministerial order into the National Institute for Educational Research and Documentation (Institut National de Recherche et de Documentation pédagogiques), with its headquarters in Paris. The Institute has branches - serving school districts (académies) or "départements" - throughout the country. It is provided with staff and financial resources. At the junction between universities and basic research on the one hand and schools on the other, this network of services is well placed to achieve its objectives: "To carry out and co-ordinate the basic and applied research projects conducted by the Institute on educational problems".

The Institute has a pre-school education department which is at present dealing with:

- Preventive education: how to ensure the best possible adaptation of young children to the school and the educational process; early diagnosis of deficiencies;
- Development of the spoken language and transition to the written language;
- Motor development;
- Development of powers of logical reasoning in the young child (approach to mathematics);
- Possibilities of early learning of a foreign language.

A number of nursery schools have taken part in this research by applying in the classroom the ideas and methods gradually emerging.

Mention must also be made of improved methods evolved in teaching practice, departments of primary school teacher training colleges ("écoles normales d'instituteurs et institutrices") - at the schools attached to such colleges and schools used for teaching practice - and of similar work in each inspectorate. There is thus a two-way flow between central or local services and schools, which are never cut off or thrown back on their own resources.

For several decades, French nursery school education has been the outcome of a gradual development brought about by constant adaptation of the means available to teachers (ideas, methods, documentation) to the aims of pre-school education. At a time of fast moving change affecting many branches of knowledge and our very way of life, it is important that French nursery schools be served by a science of education subjected to constant reappraisal and capable of adapting its content and methods to needs as they emerge. The French general public is perhaps vaguely aware of this when, with touching but firm conviction, it expresses its satisfaction with this branch of French education. And it is in this context that children of all backgrounds come together to enjoy what their families consider the children's "right" to education.

SWEDEN - RESEARCH CONCERNING THE DEVELOPMENT OF THE CONTENT AND METHODS OF THE PRE-SCHOOL CURRICULUM

Karl-Gustav STUKÁT

Some years ago our institute performed a study which had as its purpose to evaluate the existing pre-school programme by comparing 130 pre-school children with 130 home-based children on a number variables related to the pre-school objectives. This evaluation was carried out when the children were in grade 1. A follow-up study with a more limited number of variables was undertaken two years later in grade 3.

Comparisons of this kind are often invalidated by the difficulty experienced in finding equivalent groups. We were in the lucky situation for research purposes, but not for others, in that the number of children on the pre-school waiting list was greater than the number of children who received pre-school training. We could therefore choose the home group (the control group) from among the children on the waiting list. Furthermore, matching was performed on the basis of sex, age, father's occupation, living area and number of siblings. The experimental group included children who had attended pre-school for 1, 2 or sometimes 3 or 4 years. The main results are given in Table 1. A plus sign means significant difference in favour of the pre-school group, when in parenthesis the sign reflects a marked tendency. A zero sign stands for no difference.

Table 1

	Grade 1	Grade 3
Physical		
Weight	0	
Height	0	
Diseases during pre-school	(+)	
Diseases after pre-school	(-)	
Motor		
Lincoln-Oseretsky	0	
Rhythm test	0	
Social emotional		
Daily life tasks	+	
Adjustment in home	0	
Adjustment in school	0	0
Extraversion	(+)	
Sociometric status	0	
Observations: activity	0	
" group play	0	
" organised play	0	
Frustration: extrapunitivity	(+)	
" intropunitivity	0	
" impunitivity	0	
Suggestibility	0	
Nervous symptoms	0	0
Interests and activities		
General motor activity	(-)	
Manual-constructive play	+	
Role playing	0	
Intellectual games	0	

	Grade 1	Grade 3
Knowledge and achievement		
General knowledge	+	0
Vocabulary	(+)	
Language use: coherence	+	
" stereotypes	0	
" creativity	(+)	
" correctness	+	
Moral concepts (Piaget)	0	
Painting: form level	0	
" colour	(+)	
" originality	(+)	
School readiness and school achievement		
School readiness test	0	
Reading	0	0
Spelling	0	0
Arithmetic	0	0
Teacher rating of school achievement	(+)	0

From these results the question of whether pre-school is favourable for the children or not cannot be answered by a simple "yes" or "no". In some variables the pre-school children apparently had gained from their pre-school experience, in others there were no differences. Is there any coherent pattern in the result picture? With knowledge of the types of activity that characterised, and still characterise ordinary pre-school in Sweden, it seems as if positive effects appear in those areas to which special attention is given: general knowledge, vocabulary, verbal expression, daily life routines, painting, manual-constructive tasks, whereas areas with more intangible objectives such as social-emotional adjustment and mental health do not show corresponding effects. Nor does there seem to be general transfer to achievement in elementary school subjects. Somewhat paradoxically, the results seem to suggest that pre-school, which is programmatically a non-teaching school, achieves its most evident effects in areas where some kind of teaching still takes place. There seems to be some relationship between these findings and "the specificity of effects" noted in recent Head Start evaluations.

Other comments could be made on the basis of the results. Suffice it to say that no negative effects were recorded. Thus pre-school seems to fulfil Professor Nummenmaa's modest criterion that pre-school should at least not do any harm. As to the influence exerted by the length of pre-school experience, a positive correlation was found only in the variable "daily life routines".

The results of the above described evaluation study provided the main impetus for a new project aiming at the development of an experimental pre-school programme using the experience gained.

The main features of the experimental programme are:

1. The programme is not intended to be a substitute for, but a supplement to, the existent activities in pre-school. It has been planned to cover about one-third of the pre-school day.

2. Three areas were somewhat subjectively chosen for innovation: social training, communication skills and concept formation. By a happy coincidence these areas are the same as those chosen by the Swedish Pre-school Commission.

3. The programme is planned mainly for 6-year-olds, although it can probably be used in non-graded settings with children of varying ages.

4. More attention is given to making the pre-school goals more concrete than is usual. Official goal statements are so general and vague that they give very little guidance for the teacher's daily work. Not very much more is said than that pre-school should aim at fostering the child's physical, motor, intellectual and social-emotional development. Perhaps official goal statements cannot or should not be more specific, but the teacher cannot stay at this general abstract level. In this pre-school project an attempt has been made to give the teacher examples of how concrete activities can be derived from the general objectives.

   Thus, under the heading of "social skills" are grouped such objectives as understanding and respecting the individual's value, understanding and respecting rules and norms for human relations, understanding and respecting emotional reactions. Each of these objectives are then spelled out further. For example, understanding the individual's value means understanding oneself and others, and this means, among other things, being able to describe oneself, knowing what one is able to achieve and not to achieve, being aware of situations when one has made somebody happy or when someone else has done something good to you, knowing similarities and differences between handicapped and non-handicapped children, being able to find games when one plays with handicapped fellows, etc.

   Communication skills include ability to give information, receive information and interpret information, and also preparatory reading functions. Each of these aspects have been specified further.

   Concept formation is mainly centred around such objectives as identifying and describing objects, classifying them and perceiving relationships. Ample illustrations are given for each of the objectives. Concept training is not limited to quantitative or science concepts; applications to the social world are also used.

   The project group has actively pursued its efforts to furnish concrete instances within the different main objectives. I would like to emphasise, however, that the ambition has not been to achieve a complete coverage of the innumerable subjects. This is impossible and furthermore, it would have disadvantageous effects on the teachers who probably would feel restrained in their own initiatives to interpret pre-school goals. The ambition has been the more modest one of suggesting a way of thinking, a way of relating lofty goals to the manifold and dynamic daily school life.

   It should also be stressed that the objectives are not to be considered as terminal goals to be reached by all pupils during the pre-school period. Rather the goal descriptions are pictures of sequential steps in development.

5. In methodology the programme has drawn upon the ideas of Nomburger, Erikson, Piaget and Skinner. The teachers are given rather detailed methodological suggestions related to the different objectives, and a variety of material has been developed or available material has been used for the programme purposes. In addition to activities aiming at goals in one area an attempt has been made on the basis of experience, to integrate activities which aim at different objectives, e.g., concept training using family or society situations and using the opportunity for language training situations.

   During the field testing year the teachers had an initial three-day instruction period. They were given new instructions and materials every second week and were also visited by consultants every fortnight.

6. The evaluation of the programme has been performed by comparing 500 children who followed the experimental programme and 500 control children.

The results are being analysed. Table 2 below gives some preliminary findings.

Table 2

Social observations		Concepts	
Co-operation	+	Qualitative	+
Gives support	0	Science	+
Responsibility	0	Social	+
Gives help	+		
Dominance	-		
Aggression	-		
Independence	0	Attitudes to:	
Asks for help	0	Pre-school	+
Adjustment	+	School	0
Communication		Teacher	
Phonet. encl.	0	Nurturant role	+
Vocabulary	+	Non-directive	+
		Orderliness	-
		Dominance	-
School readiness			
		Indirectness	+
Reading test	+	(Flanders obs)	

NETHERLANDS - PRE-SCHOOL EDUCATION AND DEVELOPMENTAL PSYCHOLOGY: RESEARCH CONCERNING THE AGE GROUP 2-7 YEARS

Anthonie K. de VRIES

I

Until recently all psychological studies on children of nursery school and kindergarten age in the Netherlands have been descriptive, hypothetical and carried out by the so-called "phenomenological" method. Recent studies are still descriptive but try to develop instruments for systematic observation.

Although many universities in the Netherlands have started studies in developmental psychology, hardly anything has been published yet. There has been no tradition in empirical studies. Methodologically speaking, many research projects have been of inferior quality, but much time is now being spent on the development of instruments which may help to improve the quality of future research.

II

The theory of Piaget on the development of cognition challenges developmental psychologists in the whole world to agree with his ideas, to question them or to reject them completely. Since 1936 certain psychologists in the Netherlands have rejected Piaget's theory on fundamental grounds but this group of psychologists offered no tested alternative theory, only theoretical suppositions.

Nowadays the development of cognition is one of the most important topics in developmental psychology. The theory of Jean Piaget was reintroduced in 1966 by Dr. J.J. Dumont of the Catholic University of Nijmegen.

In 1967 Dr. G.A. Kohnstamm published a critical study on Piaget's concept of spontaneous maturation of cognition. From a learning-psychological point of view Kohnstamm tried to prove that some mental actions like the ability to operate with the concept of class-inclusion can be trained at an early age. According to Piaget the absence of these mental actions at an early age proves that they develop slowly and appear spontaneously at a later stage when the child's whole apparatus has attained a new level.

The work of Kohnstamm is part of the discussion started in the United States between learning psychologists and Piagetian developmental psychologists. The work of Bruner and the review of Sigel and Hooper "Logical Thinking in Children" (1), for example, are clear instances of this discussion.

Since Kohnstamm, Dr. R. Hamel of the University of Amsterdam has published a study on the relation between conservation of liquids and language level in children at the age of six years. He proved that the acquisition of the ability to recognise the quantitative equivalence of two equal amounts of water poured into containers of different sizes correlated highly with the development of language use. Six-year-old children with high scores on the Utrecht Language Level Test performed better in a test on conservation of liquids than children with lower scores. Dr. Hamel questions Piaget's supposition that language is structured by logic and not vice versa. This is another topic in the discussion between the Geneva school and non-Piagetian developmental psychologists.

The relation between developmental psychological interest in the experiments and theory of Piaget, and experiments in pre-school education is clear. Experiments in pre-school education have to be placed in a theoretical frame, and we must admit that Piaget has provided us with an impressive theory on the development of cognition.

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(1) Sigel, I.E. & Hooper, F.H. (eds.): Logical thinking in children. New York: Holt, 1968

III

The great interest, perhaps I should say, the one-sided interest in pre-school education and cognitive development of young children started in the United States, and has been called the "Sputnik syndrome", as the launching of the Russian sputnik started an endless series of critical articles on the quality of education in the United States. In the Netherlands the influence of this development in the United States can be seen in the money spent by the Dutch government to stimulate action research on training cognitive skills in pre-school children and children in elementary-school. The University of Utrecht has started an enrichment programme and its evaluation in a series of kindergartens in the slum quarters of the town. The School Psychology Department of the Centre for Public Health in Haarlem has begun enrichment activities in kindergartens in Haarlem. In Rotterdam a municipal bureau for educational research has started enrichment activities in a series of elementary schools in two of the older districts of the town. In Amsterdam, recently, a school advisory service has been established which is directed by Dr. C. van Calcar who intends to make his school advisory service the centre for a series of enrichment activities and of methodologically correct evaluation activities.

Dr. van Calcar introduced an important enrichment programme in a series of elementary schools in Enschede with a working class population. He chose the first grades of 34 elementary schools for his project with six schools serving as controls. He trained the teachers of the experimental classes to use a remedial reading programme, informed the parents of the children and asked them to be interested in the results of their children. Schools chosen to serve for control purposes had to meet the following criteria:

1. The social background of the pupils should not be inferior to the social background of the pupils of the experimental school. That is the pupils should come from the same social level or from more privileged homes.

2. The average IQ of the pupils in the control schools should be higher than the average score of the experimental group.

3. The reading scores of the control group should be deemed "good" by a team of specialists. No special remedial reading programme was used in the control schools.

4. The arithmetic test scores of the control group should be comparable to the arithmetic test scores of the experimental children; this to be sure that the control schools did not spend more time on arithmetic training than on reading training.

At the end of the first grade a comparison was made between experimental and control schools. Results of the enrichment activities were as follows:

Technical Reading Test: 33 of the 34 experimental schools attained better average scores - ten schools even achieved significantly better scores.

Comprehensive Reading Test: 29 experimental schools reached better average scores than the control groups, and of these 29, twelve groups even reached significantly better scores.

The research design used in Enschede by Dr. van Calcar has become popular in the Netherlands.

The Nursery School Project in Amsterdam for children who are between 2 and 4 years of age was started in 1970, and in it Dr. Kohnstamm is endeavouring to demonstrate that nursery school education stimulates the mental development of young children. The aim is to follow the development of children who attend the nursery school. For every child a matched control has to be found, a control who does not attend another nursery school. Children who are under two years of age are tested with the Bayley Infant Scale.

Two-year-old children are tested with the Stutsman IQ test and a vocabulary test specially developed and standardised for this project. When they leave the nursery school the children are tested again with the Stutsman and the vocabulary tests, and with the Terman-Merrill Intelligence Scale plus the Utrecht Language Level Test. Every six weeks during the period that the child attends the nursery school, an inventory is filled in by one of the teachers on the social behaviour of the child and during the child's first years at the nursery school an inventory concerning all kinds of play-activities, social contact and verbal behaviour is filled in by a student observer. Although this project is only meant to prove that nursery school education stimulates the development of young children, its importance can also be found in the two new specially developed instruments - a vocabulary test and a comprehension test.

IV

Background to the Utrecht project

In 1967 a study by Van Heek (1), a Dutch sociologist, showed that no "unused potential intelligence" was to be found in children from working class families at the end of elementary school. This concept "unused potential intelligence" was chosen to indicate a group of children who were thought to be intelligent enough for secondary education but were only taking lower engineering courses or attending technical schools. But hardly any "unused potential intelligence" was found. All the intelligent children from working class homes went to higher secondary schools. Even so there were relatively few of these intelligent children. Despite the fact that the working class in the Netherlands comprises 52% of the whole population, only 23% of working class children attend selective secondary schools. The other 48% of our population, middle class and upper class families provide almost the whole population of the secondary school. Van Heek speaks of a "loss of intelligence" during the elementary school period. But a study by Nuttin (2) in the Dutch speaking part of Belgium shows that the group of lower class children already show deficiencies at the age of six years. The study of Nuttin provided one of the arguments for starting enrichment education early, that is to say, before children enter elementary school. Our kindergarten system provided a starting point; about 95% of Dutch children between 4 and 6 years of age attend kindergartens. In the cities and villages the attendance rate is almost 100%.

The programme and the evaluation

In 1967 the Institute of Education of the University of Utrecht received a grant from SVO (Stichting voor onderzoek van het onderwijs), a governmental foundation for educational research innovation, for an experiment with programmed help to lower class children in kindergarten.

The researchers distinguished three different types of work:

- help to the child
- help to the family
- help to the whole population of the school.

They planned three different programmes, focused on these three objectives. The goals were, however, the same: to give the children of unskilled workers the best possible start in elementary school.

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(1) van Heek, F.: The hidden talent. Milieu, secondary school selection and educational performance in the Netherlands. In Pedagogica Europaea, vol. iv, pp. 19-41, Amsterdam, 1968

(2) Nuttin, J.: De verstandelijke begaafheid van de jeugd in verschillende sociale klassen en woonplaatsen. Brussels, 1965 (English summary).

The first programme, directed towards the individual child, was called the Language and Thought Programme. It was based on the presupposition that language plays an important role in thinking and reasoning. The correct use of language for the organisation and transmission of information was taught to children, in order to enable them to answer questions about things and relations in space and time. This programme was based on highly structured discussions between teacher and small groups of 6 to 7 children during 20 minutes a day. Specially trained teachers gave the Language and Thought lessons.

The second one is a Family Programme, based on the assumption that one of the best ways to fight intellectual retardation is to cultivate and maintain in lower class parents an interest in the cognitive development of their children. Home visitors taught the parents (once a week or once a fortnight) how to observe their children, to read to them from story books and to play games with pictures or dice with them. Parents were also taught to take a lively interest in the school attended by their children.

The third programme, called the School Readiness Programme, started from the presupposition that the existing kindergarten activities have to be changed in order to prepare lower class children for the tasks in elementary school, especially for reading and arithmetic. This programme concerns itself with the whole kindergarten population in a lower-class area and was carried out by the normal teachers.

Although the three approaches of the Utrecht Compensatory Programme differ in the means used to meet the problem of how to raise measured intellectual and scholastic levels in lower class children, their goals were the same. This enabled us to evaluate them by means of a single series of instruments.

Subjects were assigned randomly from a common population to the experimental and the control groups, as the subjects were to be found in classrooms and could be considered to be more or less naturally assembled collectives. Only part of the experiment may be presented as non-equivalent control group procedure with pre- and post-test as basis for the experimental design, however. We started out with the idea of testing several control groups, chosen randomly from the population of unskilled workers' children at the end of kindergarten and of using the best of these groups as a standard.

Experimental groups who underwent a training programme would have to do much better than these "best" control groups and come up with significantly better scores at the end of kindergarten, before the training programme would be considered to be of help. We soon noticed, however, that the scores of the control groups were not very reliable, as the test results between the control groups within the same year group showed unexpectedly great differences, and the results of the different year groups also showed differences that were significant when tested statistically, so that the non-equivalent control group design with pre- and post-tests seemed to be a better choice. This means that we added pre-tests to control the main effects of history, maturation, testing and instrumentation.

Choosing the controls

As mentioned before, the Compensatory Programme was composed of three programmes which were carried out as distinct projects in several areas of Utrecht. In two areas a combination of the Family Programme with one of the two other programmes was carried out in addition, in order to see whether extra impetus from the parents would give better and longer lasting results in kindergarten intervention programmes.

As the influence of the programmes had to be traced in elementary school, those kindergartens which had a close connection with an elementary school in Utrecht, were chosen. Moreoever, schools with homogeneous lower class populations were preferred to schools with a mixed population. These conditions entailed a limited choice of usable schools, and, in fact, all schools of the type mentioned in Utrecht had to be used, for the experiment. No schools were left for comparison. Being aware of this situation before the experiment started, we decided to use as control groups, two generations of children from the kindergartens where we had intended to start intervention. In 1968 and 1969, before the start of the experiment, the whole population of a series of kindergartens was tested on entry to the elementary school. From 1970 to 1972 these control groups were followed in the elementary school and tested with the same battery as the experimental groups to follow.

The results for the three different approaches of the Utrecht Compensatory Programme do not differ very much. The Family Programme approach shows hardly any traceable changes in scores on intelligence or language tests. The School Readiness Programme has only been followed and evaluated in one school for a group of sixteen children. The children showed some gains in IQ scores and remarkably good scores on Reading Readiness and Arithmetic Readiness tests. They retained their gain in reading and arithmetic skills in the first form. The Language and Thought Programme revealed some IQ gains and some gains on the language test.

We learned from the summative evaluation of our experiment that results are only to be expected in those areas of cognition or in those skills that have really been trained. Hardly any transfer of training may be expected. That means that you have to decide first what kind of behaviour you expect the children to be able to perform, before you start to build a curriculum.

In Utrecht we have just started to build a new kindergarten curriculum for unskilled workers' children. Its main goal is the training of cognitive skills, especially problem solving.

We wish to build a programme which trains the children to use a series of problem solving strategies. As our experience with the first programme has shown that hardly any of the trained strategies functioned outside the classrooms, we are now trying to find a means of guaranteeing transfer of training to situations outside the school.

The Netherlands has a well developed kindergarten system with historic roots in the methods of Froebel and Montessori supplemented with the newer philosophy of free creativity and play. Leading figures in our kindergarten world feel threatened by the newly developed pre-school curricula for the children of unskilled parents. And maybe they are right to feel threatened because, although these curricula are only developed to serve a well circumscribed group of children, they may exert an influence on the whole kindergarten system. Leading figures in the kindergarten world fear that our kindergartens will in future become veritable schools in which children have to work instead of being free to play and to create. I endorse their fear and I express the hope that our kindergartens will continue to give pride of place to the social and personal development of children.

FINLAND - THE EFFECT OF TRAINING ON THE GRAMMAR OF PRE-SCHOOL CHILDREN*

Isto RUOPPILA

I

The acquisition of morphological and syntactic rules of language during early childhood has been the object of intensive study in many languages during the last few years. As regards English some surveys have already been published on the results (McNeill, 1970; Slobin, 1971).

Research on the acquisition of morphological and syntactic patterns has been influenced on the one hand by psycholinguistics, on the other by the psychology of learning. This duality of starting points manifests itself also in the way of presenting problems and in the interpretation of results.

One of the methodological difficulties when studying the acquisition of grammar was for a long time how to separate those language productions where the child imitates what he has heard from those which he creates himself, because the verbal stimulus environment of the child cannot be known so exactly. Attempts have been made to solve this problem by investigating errors, which children have made in their speech. Such a study, however, is slow, and besides, it does not make possible a systematic variation of stimulus material. Only when Berko (1958) in her study on the morphological patterns in English used, in the questions presented to children, artificial words (or words no longer in current use), which, however, followed the phonemic patterns of English, was the possibility of varying the stimuli methodologically established. This property of the method has not, in my opinion, been sufficiently utilised. This method also makes it possible to control the fact that the child has to solve the problem in some other way than relying on something he has heard earlier.

Research on the acquisition of morphological and syntactic patterns has largely been descriptive. Attempts have been made to present what linguistic patterns children at different ages master. In addition, the relations between the verbal development level and other cognitive development levels have been studied. Ordinary intelligence tests have most often been used to measure the last mentioned variable.

The effect of practice on the acquisition of grammar has received only little attention. It should, however, be noticed that the objectives of enrichment programmes in the United States emphasise the child's verbal development, but measures by which the effects of enrichment programmes have been described (Blank & Solomon, 1968; Bereiter & Engelmann, 1966; Classen et al., 1969; Gotkin, 1968; Gray & Klaus, 1965; Karnes et al., 1968; Meier et al., 1968; Weikart, 1967) have seldom included variables which represent the mastery of language in all its aspects (as for example, The Illinois Test of Psycholinguistic Abilities, Kirk et al., 1968).

Enrichment programmes meant for children living in a deprived environment have caused changes in children's behaviour immediately after the training programme (Bereiter & Engelmann, 1966; Gray & Klaus, 1965; Karnes et al., 1968) when these effects have been measured by the Illinois Test of Psycholinguistic Abilities (ITPA) (Kirk et al., 1968). Only Clasen et al. (1969) refer to a more permanent effect lasting at least for one year. The problem with enrichment studies is that the objectives set for the programmes and the measuring methods used to study the programme effects do not correspond very well. Thus the yield of these studies is not at the moment high when attempts are made to answer questions on the trainability of linguistic patterns. It may be that reports on this problem will be published when these studies have advanced further.

(*) This is a shortened version of the lecture. The full text, which includes statistical tables, can be found in the Finnish journal of education, Kasvatus, published by the Institute of Educational Research, University of Jyväskylä.

Studies, in which it has been attempted specifically to train morphological and syntactic patterns, have been limited to slightly mentally retarded children (Blue, 1963; Mueller & Smith, 1964; Smith, 1962) or cerebral palsied children (Hart, 1963). In these studies the immediate effect of training has been proved significant, but if information on the lasting effect of training exists, it has been found to be negligible (Mueller & Smith, 1964).

Morphological and syntactic patterns have also been taught to normal children by means of special training programmes. Cazden (1969) varied the programme so that in one group an adult completed grammatically the child's incomplete sentences by the so-called 'expansion' method. In another group, an adult presented the child's sentence in new words in such a way, however, that the new sentence was connected with the child's own expression, the so-called 'modelling' method. The results were clear-cut. Modelling was better than expansion. In comparison with the group of children who received no special treatment, there was a modest gain in linguistic performance among the children who were in the 'expansion' group but a large gain in the 'modelling' group.

Cazden apparently has shown that modelling assists linguistic development, but it is not clear that she has shown that expansion does not. A recent study by Feldman and Rodgon (1970) compared 'contingent' expansion (only clear utterances expanded) to 'non-contingent' expansion (all utterances expanded) and found, that contingent expansion helped more than non-contingent and that both kinds of expansion were superior to modelling. The subjects of Feldman and Rodgon were similar to those of Cazden in age ($2\frac{1}{2}$ years) and background (poor urban black families), and had had similar school experiences (day-care centres). The tests of linguistic ability were not identical in the two experiments but were at least similar. It is not clear why a different result appeared with modelling. The relative effectiveness of expansion and modelling remains an open question, nor we do not know the long-term effects of these different training methods.

The effects of practice on the mastery of morphological and syntactic patterns have also been studied in the Soviet Union. The theoretical starting point of these studies strongly emphasises the orientation reaction (Sokolov, 1963). Of vital importance in the process of the acquisition of language is the orientation to the acoustic patterns of language. Popova's (1956) investigation dealt with the question of whether such orientation can be formed in children aged from 1 year 10 months to 3 years 6 months. Agreement between masculine and feminine nouns and the past tense of verbs, very common and difficult in Russian, served as material for the study. In the first part of the investigation the usual characteristics of this process were elucidated. For this purpose, masculine and feminine nouns were included in a game in the course of which the child had to form sentences consisting of two words (a noun, and a verb in the past tense agreeing with the noun in gender). It was found that the formation of the grammatical rule is very slow passing through four stages: in the first stage, the predominant form of agreement is agreement characteristic of feminine nouns; in the second stage, agreement in the masculine gender begins to predominate; in the third stage, there is a confusion of these forms; and finally, at the fourth stage, correct agreement is formed. An analysis of findings permitted the conclusion that the formation of correct agreement is based on the child's orienting in relation to the sound of the word (in this case the word ending) in its original form.

In the second part of the experiment an attempt was undertaken to teach children to make proper agreement. Children were shown pictures depicting objects on a table and told a story about the picture in which nouns and past tense verbs agreed in gender. The children quickly memorised these little stories, then repeated them to the experimenter. In the course of retelling the stories correct use of agreement was encouraged verbally, whereas an erroneous one was corrected. When agreement was correct, the experimenter specially emphasised the endings of noun and verb. Training continued until correct agreement was achieved for all the words presented in the experiment. After this the children had to learn correct agreement for other words as well. The results of this experiment were first, that some children failed to develop correct agreement; second, that establishment of agreement passes through the same stages as it does in a child's normal speech practice; third, that a great number of repetitions of word combinations by the experimenter and the subject himself is necessary to establish agreement. Thirteen children served as subjects in this experiment; eight needed

over 200 repetitions and five needed over 300. It turned out that the simple accumulation of experience in social intercourse without specially organising the child's activity in relation to linguistic material, in the course of which establishment of orientation with reference to the word's sound form would take place, does not lead to a sufficiently rapid mastering of this grammatical rule.

On the basis of the earlier results a new method of teaching was planned. In the third experiment a certain kind of game was used. In that game children had to bring small animal figures, with names consisting of masculine and feminine nouns, into a toy house. Whenever the child responded to the experimenter's question with correct noun-verb agreement, the doors of the toy house opened and the animal was let in; if not, the doors did not open. The experimenter pointed out the error, and unless the child corrected it immediately, the experimenter mentioned the error again and passed on to the next animal. This method was found to be very effective. All the children without exceptions, even those who scored lowest at the beginning of instruction, were able to form correct agreement. The learning occurred relatively quickly. Of twenty children, twelve needed less than 50 repetitions; three from 50 to 100; five over 100. None needed more than 200 repetitions. The data from the last experiment indicate that orientation with respect to the formal attributes of words emerges very early in children, and that by creating certain conditions it becomes possible to form such orientation in full even in very young children. The above-mentioned research report does not, however, reveal what the possible lasting effect of training has been and besides only one grammatical rule has been trained.

In addition to Popova, Khokhlova (1955) has also studied the effect of training on the verbal development of pre-school children. In her study the aim of training was the analysis and discrimination of sounds in words. Even though this study is somewhat remote as regards the study of the effects of training on the mastery of morphological patterns, it should be realised that morphological regularities are expressed in Finnish by suffixes, and it is quite obvious that information on factors affecting sound analysis can be used in the planning of a training programme, to improve the auditory discrimination of morphological regularities.

In her first study Khokhlova assumed that a clear, distinctive pronunciation of sounds essentially affects the sound analysis of words. The experimenter pronounced the word and asked the child to divide it into sounds in a loud voice. The task was practised by asking what the first sound was, what the second, etc. The words presented were one-, two- or multiple syllable words. In all the programme included 40-45 words, each practise period took about 20 minutes, and each child was trained from five to seven times. This kind of training method proved quite ineffective. The study shows above all that children's fundamental difficulty in sound analyses is their inability to hear vowels and discriminate consonants from vowels.

In the following phase Khokhlova used coloured cubes of different shades to present each sound. The child's task was to mark each sound with a different colour. This method did not prove much more successful than the previous one. However, 25 per cent of the children could solve more than 50 per cent, but less than 75 per cent of the sound analyses. Even so, 75 per cent could not solve sound analysis tasks at all.

In the third phase, sound analysis was practised by placing a picture card presenting the meaning of the word to be analysed in front of the child. Below was a chequered board where each sound corresponded to a square. The analysis was carried out in the following way: after the child had named what was illustrated on the card he placed wooden pegs in the squares below. After the child had performed this task successfully, he had to analyse the sounds in the word without the chequered board, with the help of the pegs only, and finally without any helpful devices. This method of training proved considerably better than the others. 82 per cent of the children passed without any or only a few mistakes, 12 per cent performed the tasks partially and had more than 50 per cent mistakes. Only 6 per cent could not learn the sound analysis of words by this method.

Khokhlova's research results show that 4-6 year-old children are able, quite easily, to learn the sound analysis of words, i.e., a child learns to discriminate the sounds forming a word from each other and to produce them. However, the successful carrying out of the task presupposes as demonstrative and concrete a training as possible. The results of Khokhlova's study on the effect of training do not indicate to what extent the analysis thus acquired is permanent. Furthermore, the study did not include a control group.

II

Problems of the study

As early as 1964 in the Department of Psychology at the University of Jyväskylä a research programme was initiated, the purpose of which was to describe the formation of morphological patterns in Finnish, to investigate the effects of practice and to develop a model describing the language learning process.

The research programme has thrown light on questions dealing with the long-term effects of training on grammatical patterns, transfer of training from production to comprehension and to non-trained grammatical patterns. Furthermore, the effects of the amount of training, the effects of training in children of different ages and the effects of training on the mastery of various kinds of morphological patterns have been studied. Finally the relations of the mastery of patterns to some variables measuring the cognitive level have been studied, while an attempt has been made to study inter-individual differences found in the mastery of grammar.

Hypotheses of the study

On the basis of earlier research, training was expected to increase the mastery of morphological patterns. The effect of practice was assumed to be permanent and it was assumed to transfer so that practising the production of linguistic patterns facilitates their comprehension and that practising certain patterns in general promotes the mastery of morphological patterns. When the amount of practice increases it is expected that its effects become stronger. It was further assumed that practice has a different effect on the various grammatical rules and at different age levels. Hypotheses concerning the relations of factors describing the mastery of morphological patterns to the cognitive development level could be presented only in very general terms on the basis of the law of positive correlations.

Subjects

The subjects in the experiments were generally children aged 3 to 6 years, both girls and boys, who represented all social strata except the highest. The intelligence of the children was tested by performance and verbal tests. It varied from 80 to 120 IQ. Some of the youngest children came from day nurseries, some were looked after at home; almost all of the six year-olds attended kindergarten.

Training programmes

The training programmes were constructed so that either rare or artificial words were used, which, however, agreed with the phonemic patterns in Finnish and which were assigned a significate by picture cards. This procedure made it possible to control accurately the amount of practice. The training programmes differed from each other as to how many different morphological rules they included, how many times each rule was presented in the programme and how many times the whole programme was presented. Furthermore the linguistic attributes of the words, like their length, ending and gradation were systematically varied. The items of the training programme were not used in the other measurements. Table 1 presents the basic characteristics in the various experimental designs. In all cases practice was given individually and the order of presentation of the items was randomised separately each time. If the child answered correctly, his answer was socially reinforced by saying "good", etc., and the programme was continued. If the child could not answer or gave a wrong answer, the experimenter said the correct answer emphasising the ending. The children's interest in the practice programme remained fairly high in all cases. In all programmes, brightly coloured cards were used so that the interest of the children was maintained during the programme. The average duration of each practice period was 20-30 minutes.

Table 1

The basic characteristics of the different experiments:

	Experiment I Luukkonen & Ruoppila, 1969	Experiment II Ruoppila, 1972	Experiment III Päivinen, 1972
Trained grammatical rules	comparative of adjectives -mpi superlative adjectives -in	nouns: allative -lle (to the boy) comitative -ne, -nnen (with the boy) abessive -tta,-ttä (without help) adjectives: comparative -mpi superlative -in verbs: active declarative past tense -i passive present -taan, -tään -daan, -dään passive present perfect -ttu, -tty	nouns: inessive -ssa, -ssä (in school) partitive -a, -ä, -ta, -tä (a little milk) adjectives: comparative -mpi superlative -in plural endings -a, -ä, -ta, -tä formation of adverbs -sti verbs: active declarative present (no special distinctive feature) active declarative past, -i passive present -taan, -tään -daan, -dään
Number of repetitions of each rule	16 repetitions	5 repetitions	4 repetitions
Aspect of stimulus words varied	meaningfulness (frequent-rare) number of syllables: 2, 3 and 4 ending (vowel - consonant)	all words rare and no more in use number of syllables: 2 and 3 ending (vowel - consonant)	all words rare and no more in use number of syllables: 2 and 3 association value (measured separately)
Gradation in the programmes	kk:k 7, mp:mm 2, p:v 1, tt:t 3	not systematically varied	not systematically varied
The programme was presented	0, 2, 4 and 6 times	0, 4 and 6 times	0, 3 and 5 times
Post tests	2 different tests	2 different tests	2 different tests
The long-term effect of training studied	6 months	6 and 12 months	5 months
Age of subjects	3- and 4-year olds	4- and 5-year olds	3-, 4- and 5-year-olds
N in each group studied and total N	5 = 40	5 = 30	8 = 72

The morphological patterns of Finnish included in the training programmes were chosen on the basis of earlier studies, which surveyed their mastery in different age groups (Himberg, 1971; Malin & Ruoppila, 1969; Ruoppila, 1969; Ruoppila & Liste, 1967). Especially in the second and third experiments we attempted to choose some quite rare patterns (cases of nouns, abessive and comitative). This choice was based only on the general rating as regards the frequency of rules in the spoken Finnish, because the frequency of these has not been studied statistically.

Tests used in the study

For each experiment a pre-test, post-test I and post-test II were constructed to measure the mastery of each morphological rule. Either rare or artificial words were used, except in the first experiment where some of the items were based on the inflection of commonly used words.

In items requiring the production of a grammatical rule the children's answers were scored with regard to both the mastery of the model, distinctive grammatical ending, and the grammatical correctness of the whole answer. By mastery of the model is meant whether the child's answer included the proper form of the morphological rule or not, and by linguistic correctness an answer where the word in question had neither become shorter nor longer, the required gradation appeared and the answer was not dialectal. The model- and correctness variables correlated technically with each other because the demand for correctness included the demand for mastery of the model.

Because we used rare or artificial words, we used as criteria for the linguistic exactness of their inflections answers given by a majority of groups of students of Finnish, when the items were presented to them at the planning stage of the experiments.

The ability to recognise morphological patterns was measured by multiple-choice tests constructed for this purpose, where the child was to choose from two alternative pictures the picture to which the morphological pattern included in the sentence said to him referred.

In all experiments the intelligence level of the children was measured by the KTK performance test series (Elonen, Takala, Ruoppila, 1963) and by the picture-vocabulary test (Ruoppila, 1971). Furthermore, various measures of the cognitive development level were included in the experiments.

Effect of training on the mastery of morphological rules

The first experiment (Luukkonen & Ruoppila, 1969) indicates on the basis of post-test I that the effect of age on the mastery of the comparative model and on the correctness of the comparative is significant ($p < .001$) and that the effect of training is also significant (effect on the model $p < .05$, on the correctness $p < .01$). It was also found that a significant interaction exists between the effect of training and age so that the effect of training is notably high on the four-year-olds, but small on the three-year-olds. The main effect of training accounts for 11 per cent (Hays, 1963) of the mastery of the comparative model, 19 per cent of the mastery of the correctness of the comparative; the main effect of age accounts for 30 per cent of the mastery of the comparative model and also 30 per cent of the mastery of correctness, the interaction explains in both cases about 10 per cent of the variance.

The effect of age on the mastery of the superlative model is significant at the level $p < .001$, and on the correctness of the superlative at $p < .01$. Age explains about 14 per cent of the variance. The effect of training on both the superlative model and the correctness is significant ($p < .001$) and training explains 30 per cent of the variance of these variables. The interaction between age and training on the model variable is significant at the level $p < .01$ and on the correctness at the level $p < .05$ level. Interaction explains about 14 per cent of the variance of these variables. Also in this case interaction is caused by the fact that training affected only to a small extent the performance of three-year-olds.

It should be noticed that the effect of training on the formation of superlative patterns is distinctly greater than that of age. Furthermore, interaction gives reason to believe that the comparative form of adjectives can be learned approximately at the age of four years, which might be a sensitive period with regard to the learning of this grammatical rule. It is evident that the formation of certain patterns of comparison presupposes a certain cognitive level in the child. For instance, results from seriation tests support the above-mentioned viewpoints (Piaget & Inhelder, 1959).

The long-term effect (the period between the two post-tests was six months) did not prove significant in the group of three-year-olds. On the other hand, the effect of training proved lasting in the group of four-year-olds. The effect on the comparative model and correctness was significant only at the level $p < .05$, partly because the children, who had been trained 4 and 6 times, received maximum scores already in the first post test. On account of this ceiling their level of performance could not rise during the interval as did the performance of those children who had received training twice or who were in the control group. The lasting effect of training on the superlative model and correctness could clearly be seen ($p < .05$) in both tests. Thus in the control group and in the twice trained group the average in the pre-test was 0.4 and in the second post test 2.5, while in the four and six times trained groups the average was 0.8 in the pre-test, and in the second post test 10.4. There were 32 items in all.

The effect of training proved practically speaking to be about the same on the different types of adjectives when some attributes of these words were systematically varied (Table 1).

Age was not a significant factor in the mastery of any morphological rules in the group of 4- and 5-year-olds. The immediate effect of training proved significant except in the cases of the comparative and past tense. The mastery of some grammatical rules (allative, past tense passive) and the total score increased significantly during the time between the two post-tests. In all other variables the mastery of grammatical rules was at the same level in the second post-test as in the first post-test. Interactions between age and training were significant only in the passive present tense. The interaction between training and the interval between the two post-tests was significant as regards the passive present, perfect and the total score variable. This indicates that the performance of the control group between post-tests improved more than that of the experimental groups, but when the models of passive present and perfect are considered it should be remembered that the performance of those who received training could not, because of a ceiling effect, improve between the post-tests.

The transfer effect of training was studied by means of comprehension tests covering all the trained morphological rules and the allative. As for the allative a significant transfer effect was found but because there was only one such rule studied, only limited information could be obtained. The performance of trained groups in the recognition tests was better than that of control groups, but the differences were not significant.

In the group of 3-, 4- and 5-year-olds the effect of age on the mastery of morphological rules (model variables) was significant with the exception of the plural inflection of adjectives and the present tense passive. The immediate effect of training was great on the mastery of most pattern models, except for the plural inflection of adjectives and the past tense active. Mastery of the trained grammatical rules remained at the same level between the two post-tests or increased significantly (present tense active) or decreased significantly (partitive, present tense passive).

The interactions between age, training and the interval between the two post-tests were in some cases significant, but in almost all cases this was caused by a ceiling effect. This ceiling can possibly be attributed to the nature of the measured grammatical rule, with the result that children at certain ages already can master the model of the grammatical rule so well that most of them get the maximum score in that test.

It can be said that the effect of training on the group of three-year-olds can clearly be seen, even though the effect does not seem to be permanent in the plural inflections and superlative form of adjectives. It must be emphasised that the group of five times trained three-year-olds achieved permanently the five-year-olds' pre-test level in the mastery of different grammatical rules. The effect of training on the group of four-year-olds appeared most clearly in the superlative, adverb formation and present tense passive grammatical rules. In other models too, the performance level rose on account of training; the plural inflection of adjectives was the only grammatical form where training did not increase the ability to use this rule. The five times trained group of four-year-olds achieved permanently the performance level of the three times trained five-year-olds. The effect of training on the group of five-year-olds was most clearly indicated by the increase in mastery of the superlative, adverb formation and the present tense passive. On the other hand, training did not, in this group either, improve mastery of the plural inflection of adjectives.

III

The study has shown that the order of difficulty among the grammatical patterns remains almost the same at the different stages of the measurements. The changes to be seen were small.

To summarise, the effect of training on the correctness of inflections in the group of three-year-olds was evident in all cases except the plural inflection of adjectives and the formation of the superlative. The effect was permanent, and in most grammatical patterns the five times trained group of three-year-olds achieved permanently the pre-test level of the five-year-olds. The effect of training on the correctness could also be seen in the group of four-year-olds and, with the exception of the plural inflection of adjectives, the trained four-year-olds achieved a level of performance, which surpassed the pre-test level of the five-year-olds.

Training affected permanently the correctness of adverb formation and the formation of the passive present tense and superlative in the group of five-year-olds. But training did not increase the correctness of the plural inflections of adjectives. The order of mastering the correct formation of different grammatical rules remained almost the same from the pre-test to post-test II.

Transfer of training was studied by comprehension tests on the trained rules. The following conclusions can briefly be drawn from the results: this kind of transfer could be found immediately and permanently in the group of three-year-olds; on the other hand, there was no transfer in the groups of four- and five-year-olds. The reason for this is primarily the ceiling effect of the test, the comprehension test proving too easy in this experiment, just as it did in the second experiment described above, for children of this age.

The study also took into consideration the importance of the association values of the words included in the training programme as a factor affecting the results of training. As regards the results it can be stated that the association value did not seem to affect the model variables, while it did affect the correct use of the grammar so that words with high association value were inflected more correctly than words with low association value. A practical conclusion can be drawn on the basis of this finding: differencies in the heard vocabulary do not seem to be an important factor, when children are acquiring grammar, when the criteria are the model variables but when the criteria are the correctness variables then the vocabulary seems to be an important factor.

As a summary of the results of these three experiments dealing with the effects of training on the mastery of morphological rules, it can be said that the immediate effect of training was significant on most patterns included in the programmes; it improves both the mastery of grammatical rules and linguistic correctness. The lasting effects, at least for half a year, of training could be seen in most morphological rules. In the third experiment, where the number of subjects was greater than in the other two experiments, the lasting effect of training can be quantitatively described. It improved the performance of the five

times trained three-year-olds to the pre-test level of the five-year-olds and the performance of three times trained four-year-olds also to the pre-test level of the five-year-olds. From a practical point of view, an effect of this size can be considered noteworthy, even considerable.

IV

Discussion

When research results on the effect of training on the mastery of the grammatical rules in Finnish are considered, special attention should be paid to the facts that the programmes were structured, individual and that they were carried out with normal children whose home language did not differ from standard spoken Finnish. It is also important to bear in mind that the stimulus-words in training programmes were rare words which are out of use in standard spoken Finnish. As regards the measured results of the training programmes it should be noted that the effects are measured only in special test situations, and we do not know the effects on the actual spontaneous speech of children. The effects of training, when teaching takes place in a small group or when children in some dialect area are taught, remain to be studied.

The results have consistently pointed out great differences between individuals in the mastery of morphological patterns. Similarly there would appear to be differences in the speed of learning, although the trained children formed quite a homogeneous group as regards age, intelligence, and social background. The inter-individual differences can be accounted for on the basis of the child's stimulus environment - what kinds of linguistic model the child gets and how often. The results indicate quite consistently that this is a group of factors which produces inter-individual differences, even though this group has not yet been studied analytically enough to reveal the critical variables. One of these factors, perhaps the most important, is the quality and quantity of actual face to face verbal behaviour between the child and an adult.

On the other hand, attempts have been made to explain inter-individual differences in the mastery of linguistic patterns on the basis of other traits of the individual. The importance of these is most clearly seen in connection with various defects, such as a defect in hearing or brain damage. In experiments carried out at the University of Jyväskylä, other than those described above, and in some of those too, the mastery of linguistic rules has been correlated with various variables of the cognitive development level (verbal intelligence tests, performance-type intelligence tests, factor tests of intelligence and Piaget-type test series). The results, however, indicate that the correlations yielded were .4 at the most. Because this starting point did not prove satisfactory, attempts have been made to find differences in variables describing the learning process itself. Oritentation to speech, auditory discrimination, short-term-memory (STM) and analogy reasoning, seem to be more closely related to the acquisition of grammar than the above-mentioned more general variables describing the cognitive development level. Information is available from one experiment, where in the group of three-year-olds the correlation between the combined variable of intelligence and the mastery of patterns was .48, whereas the correlation between the combined STM and analogy reasoning and the mastery of patterns was .69. The corresponding correlation coefficients in the group of four-year-olds were .38 and .63, and in the group of five-year-olds .56 and .44. Perhaps that knowledge can be used when planning language training programmes for those children who are backward in their speech development? Or we can put it another way - do we need different kinds of language training programmes so that individualisation can take place? This individualisation can be based on the knowledge of the child's short-term memory capacity and on the child's analogy reasoning ability.

In this connection I would like to emphasise the fact that mastery of grammatical rules, as measure by the kinds of test described above, seems to have a close relation to the learning of reading and writing, and especially to what kinds of error the child makes (Pekkanen, 1971). The language training programmes can thus be seen in their broader context. In particular, their potential use as a preventive measure has to be explored.

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CONCLUSIONS

NATIONAL AND INTERNATIONAL ASPECTS OF RESEARCH IN PRE-SCHOOL EDUCATION

Martti TAKALA

General comments on educational research

Originally, it was my purpose to use the concrete problems and results presented in the reports as the basic material for my own paper. It turned out to be impossible for practical reasons. Therefore, the approach of the present paper is more general. It is not specifically restricted to pre-school education. Nor is it directly connected with the activities of the Council for Cultural Co-operation. The speaker's personal views reflect his experiences in connection with the IEA project and other international research programmes.

The national and international aspects of research should be examined as a part of research policy. Some comments on the trends of educational research might help in defining the problems to be discussed in any national and international plans. An inspection of various lists of research documentation (e.g., Documentation Centre for Education in Europe: A documentary report on recent research into pre-school education. Strasbourg: Council of Europe, 1971 DECS/Inf. (71) 12) shows clearly the areas of emphasis and neglect in present research.

The report of the Documentation Centre states that "the overall view presented by recent research findings is one of confusion". Such a statement strikes one as surprising, especially if one is familiar with recent interest in creating experimental programmes for pre-school education in various countries. It is, however, my impression that the statement is essentially justified. We may start from a consideration of general and theoretical approaches. There are still experimental developmental studies which concentrate on demonstrating once again that there is a continuous increase of abilities, skills, achievements, etc., with increasing age. Some studies can be summarised only by saying that "individual development is not determined by internal physiological maturation alone; it is always an interaction between internal factors and external stimuli or situations". In addition, there are studies which demonstrate that various social, cultural, and economic factors contribute to the speed of development in different functions. Such generalisations are of no great interest, but the design may not allow more detailed conclusions concerning the nature of relationships to be drawn or the quantitative contributions of various factors to be compared with each other. The conflicting results of the experiments may also show how non-representative the designs have been as far as practical educational problems are concerned.

The programmes of pre-school education require studies of the accumulation of learning results during the whole developmental process, and the integration of learning experiences from different environments should be considered. The studies may start from small samples of tasks usually chosen for policy oriented research but, in addition, systematic variation of both learning tasks and background factors would be required before any broad conclusions could be made. It is my experience that many policy oriented or action research programmes (e.g., enrichment programmes), which have been initiated in a great many countries, may serve as good starting points for fruitful theoretical and applied research. If pre-school education is now recognised as equal in importance, to the other stages of education, the present small-scale efforts should be replaced by more systematic and continuing projects. At the same time the relationships between developmental theory and educational practice should be conceptually clarified.

The recommendations for educational practice, based on the present results, tend to be extremely vague and conflicting. There may be a strong unanimity, if they are sufficiently general; they may emphasise the importance of certain age groups, of some underpriviledged social groups, or of new areas of learning experiences. The recommendations may reflect the insufficiency of research results, but they also indicate that conflicting goals prevail in society and that the attitudes of educators are ambiguous concerning to what extent they want to "interfere" with the developmental process of a child.

Research problems can be evaluated in relation to the goals of society. A part of applied research is directed towards immediate goals within the present social and educational systems; the goals are not questioned. Since the different sub-systems of society emphasise different values, policy oriented research which is specialised according to each particular sector, may also serve different and conflicting purposes. Another part of research which is not directed towards immediate applications may ignore the limitations of the present institutions and the routine stereotype attitudes adopted in research traditions. It is more open to accept change. And still another part of the programmes is consciously concerned with new goals and reform plans; research is an instrument for reforms in the long run.

Decisions to be made in research policy

National research policy in education requires the following kinds of decision:

- Statement of goals: The goals can be presented at different levels of generality. The most general verbal formulations do not help much in making policy decisions. In countries which have defined their national goals of education, educational research will be encouraged and directed so that it becomes an efficient instrument for achieving these goals. New research results provide additional possibilities for re-examining priorities and goal discrepancies.

- Allocation of funds for the main fields and organisation of the channels of distribution: The evaluation of output is closely connected with the distribution organisation.

- Organisation of research: The essential questions can be presented as follows:
  How to establish fruitful research units? How to create sufficient communication between these units and the decision-making units in education?

- Definition of priorities and precedence among various projects. Criteria have been presented for establishing priorities and priority lists have been produced in some countries. If the lists are somewhat independent of long-range planning, new problems are generated: established priorities may not be relevant to the long-term requirements. New ways of thinking and new ideas developing among younger researchers will hardly get top priority rating. Through lack of active discussion, priority lists tend to become rigid, conservative guidelines.

- Training and recruiting of researchers.

- Information policy guaranteeing that new results, and recommendations based upon them, reach the persons and groups which could and should make use of them

National and international aspects of general policy

One could ask whether there are any "national" research policies in the relatively small European countries, or whether they are directly or indirectly determined by supernational factors.

The more closely research serves economic growth, the more is it influenced by anticipated economic output. Superficially, pre-school education is relatively independent of technological revolution. Indirectly, there are important connections. Some goals of pre-school education are related to human "collective" needs the fulfilment of which is not automatically guaranteed by technological development. The new problems of pre-school education might be listed among the "negative" effects of technological development. In addition, some pre-school education tasks certainly serve as a training for technological society in the long run.

Information policy: The participation of all countries of the world in information policy becomes more and more urgent. Computerised techniques which cover all educational research will not be sufficient for the purposes of application. Complete lists of publications and systems of key-words are less valuable for most consumers than well selected lists of important contributions, for example "A documentary report on recent research into pre-school education" prepared by the Documentation Centre for Education in Europe. An independent evaluation of research probjects is required. The criteria of evaluation should, however, be sufficiently broad, being determined by the purpose of selection.

Training and recruiting of researchers: There is a need for both highly skilled specialists and for the integration of specialist knowledge with general understanding of social problems. From my experience, efficient training for both applied research and co-operation can be provided by intensive international seminars which meet regularly, for example at yearly intervals. Longitudinal multinational research programmes are also useful for the further training of young researchers. As yet very little has been done in this direction in so far as pre-school education is concerned.

Organisation of research: The possibility of establishing large European research institutes has been widely discussed in European meetings concerning science policy. This solution would hardly be fruitful for applied educational research. Educational research is closely connected with national policies which differ to some extent from country to country. A substantial volume of resources will be assigned to policy oriented research which is determined by national priorities. Educational research and development seems to require above all parallel multinational activities and not large international research institutes and bureaucracies.

Such international programmes require a relatively flexible organisation. The tasks should be assigned to a selected team of international specialists who can concentrate for sufficiently long periods on each particular project. In my opinion, the experiences gained in connection with the IEA project are promising. The bureaucracy has been kept to a minimum. The national research directors, co-ordinators, and task specialists have met frequently enough to learn to understand each other and to become aware of the limitations of purely national horizons. The continuity of such large-scale studies may be threatened by permanent insecurity as regards the financing of the costs of the projects. International organisations may help to minimise the risks involved. It can also be expected that some national institutes for educational research will co-operate with each other on certain projects of common interest. Such forms of co-operation have been developed during the IEA project. If the whole project is strongly centralised so that one national institute is mainly responsible for both finance and expertise, the co-operative approach is more difficult to maintain.

Research priorities and international co-operation

The establishment of an international team of researchers, with various backgrounds, may increase the production of innovative research ideas, provided the tasks are not in advance restricted by compromises between various national interests.

If identical research designs are carried out simultaneously in different countries, large scale replications are made simultaneously. In addition, the effects of partly different systems may be examined.

Since goals and preferences may differ in various countries, interest in identical educational research programmes is difficult to achieve. For fruitful co-operation it would be extremely valuable, if national research projects could be devised so that they overlap, in part, projects in other countries. If the overlapping parts of the designs are identical, accurate comparisons across countries are possible. Furthermore, the national parts of results can be better generalised to the other countries, if the common core included in the study has demonstrated the similarities and differences between the countries.

The solutions to certain problems are based on the variation between countries, cultures, languages etc. Examples of such problems are:

- The comparison of the national goals in pre-school education as well as the relationships between the goals and the curricula in different countries;

- Educational finance: an analysis of the investments in the various sub-tasks within the system of pre-school education;

- Comparisons between learning prerequisites and output: the emphases of curricula and learning results; the effect of national language on the early learning of a second language, etc.

- All the other problems which require a larger variation of conditions than is found within an individual country, especially those concerning social and cultural systems. It should be recognised in this context that the variations between the member States of the Council for Cultural Co-operation are relatively small as compared with variations within individual countries.

Difficulties facing and arising from international projects

The projects may be too complicated to allow sufficient analysis of data. The statistical data may be neither comparable across the countries, nor adequate. Various kinds of taboo may prevent the participation of some countries in a project. Certain research methods and instruments cannot be easily applied in international comparisons.

In problems concerned with educational atmospheres or achievements, national competition is indirectly included. Even though the competitive element would be excluded from the research design, public interest would hardly overlook data which allow conclusions to be made concerning how well the national education system operates.

Not all the countries can participate in those projects which would be especially valuable for them. Funds should be available to make it possible for developing countries to participate in those international projects which are important from their point of view.

International power relationships are reflected in international research plans. The research interests and traditions of countries which are able to initiate and support financially large international projects may determine the choice of topics and the methods adopted.

The functions of educational research are different in different countries. In some countries, it is already an organic part of long-range planning; it has adopted fixed tasks and time schedules, and it will automatically change, when new application problems arise. In other countries, the total volume of policy oriented research in very limited, or research may mainly be based on chance individual ideas, and there may be no guarantee that the innovations will be applied in practice. All these factors must be taken into consideration in the international planning of educational research.

Role of the Council for Cultural Co-operation

From what has been stated above concerning the organisation of research, one may conclude that the Council for Cultural Co-operation has an important role in making proposals for international research projects in pre-school education, a field which so far has been badly neglected.

STATEMENT OF CONCLUSIONS

1. The Symposium on Research into Pre-school Education, underlined the necessity to provide for regular meetings, at a European level, of leading researchers and administrators to discuss those common problems of high priority in education to which research can make a contribution and to make proposals for practical measures of intensified co-operation in specific fields. Such European co-operation presupposes that adequate communication exists, at the national level, between researchers themselves and between researchers, administrators and teachers.

2. The Symposium in discussing the aims of pre-school education, was unanimous in stating that pre-school education should supplement family education for all children in co-operation with the parents. It was also agreed that special help should be offered to all disadvantaged children. Participants were convinced that enriched education in early childhood is one of the ways to promote equal opportunities and to reduce the present under-representation of children from working-class homes in secondary and post-secondary education. They stressed, however, that other social policies are necessary in order to improve the opportunities of such children. At the same time, the rapid social change which characterises our times, calls for a re-appraisal of the aims of pre-school education which should promote the intellectual, emotional, creative and social development of the child and his abilities to co-operate and integrate.

3. The Symposium took note of the results of recent research which has indicated that the traditional content and methods of pre-school education, although having in many respects a positive effect, do not entirely achieve the aims expected. On the other hand, experiments with new pre-school programmes have demonstrated that co-operativeness, adjustment, concepts and vocabulary can be positively influenced and aggressiveness and dominance be diminished. These research findings call for a re-examination of traditional pre-school programmes. However, the evaluation of the effects of enrichment programmes also suggests that the advantages which children have gained by them, may be lost in the primary school if its content and methods fail to maintain the motivation for further learning and development. Closer co-operation between the instititutions of pre-school and primary education is therefore necessary. The education of children at the pre-school and primary stages should be conceived as a continuous whole. This new concept should, where necessary, be embodied in legislation.

4. Participants were greatly impressed by the detailed reports on new pre-school programmes and their results in the Netherlands and in Sweden. Similar experiments were reported from a number of other countries represented at the Symposium. Participants felt that the results of these new programmes may suggest that fundamental reforms of pre-school education in Europe are necessary. They therefore recommended that ways and means be found to provide for close co-operation, at a European level, of those researchers, administrators and teachers who are engaged in designing, carrying out and evaluating such programmes. The aim of this co-operation should be to develop and test on a multi-national basis those elements of the programmes from which all member States could benefit.

5. The advancement of pre-school education is not possible without a parallel reform of initial and further teacher training. Teachers in pre-school education belong to the professional body of educators whose training at university level should be integrated by providing basic studies of the educational, social and behavioural sciences. The subsequent specialisation in view of the stage of the educational process to which the teacher wants to devote himself is only meaningful if such a common basis is established.

- The exchange of views for which the Jyväskylä Symposium provided a unique opportunity, confirmed participants in their conviction that new forms must be found at the national and at the European levels, for organising the co-operation between researchers, administrators and teachers in promotion of educational development and research-based innovation. This presupposes a priority-based policy of decision oriented research, an improvement in the scientific methods of project evaluation and essentially new forms of demonstration and dissemination of research findings to teachers, parents and the public at large. Pre-school education would greatly profit if the impact of research on early childhood education could thus be improved.

- The Jyväskylä meeting was an experimental symposium. Participants felt that this experiment was successful and that the Educational Research Symposia should be continued. In preparing further symposia the experience gained from the Jyväskylä meeting should be taken into consideration. A research symposium should be centred not on a general theme but on specific, carefully selected issues of the theme. The discussion of these issues should be prepared by surveys of research in the field concerned, background reports and papers, distributed well in advance of the meeting. The participants should consist of researchers who have done pioneering work in the field concerned and of senior officials of Education Ministries or Authorities responsible for decision-making in that field. Lectures should not predominate; the value of such symposia lies in the exchange of views and experience in both small group and informal discussion.

LIST OF PARTICIPANTS

AUSTRIA	Dr. Alfred Rieder Federal Ministry of Education and Arts Vienna
BELGIUM	Miss Claes Van Waes Chief Inspector Bruges
	Miss Jaumain Principale de l'Enseignement
DENMARK	Mrs. Agnete Helmstedt Educational Inspector Ministry of Education Copenhagen
	Associate Professor Hans Vejleskov Royal Danish School of Educational Studies Copenhagen
FINLAND	The Finnish Minister of Education Minister Jouko Tyyri
	The Rector of University of Jyväskylä Professor A. Sakari
	Mr. Erkki Aho Head of the Bureau The National Board of Schools Helsinki
	Lic. Ed. Pekka Käppi Representative of the town of Jyväskylä
	Docent Juhani Karvonen Director of the Institute for Educational Research University of Jyväskylä
	Chief Inspector Ilppo Klemetti The National Board of Schools Helsinki
	Professor O.K. Kyöstiö Department of Education University of Oulu
	Lic. Ed. Pekko Liikanen Department of Developmental Psychology University of Jyväskylä

FINLAND (cont'd)

Mr. Vesa Lyytkäinen
Councillor of Education
Ministry of Education
Helsinki

Mrs. Margaretha Mickwitz
Cultural Secretary
Department of International Relations
Ministry of Education
Helsinki

Professor Tapio Nummenmaa
Department of Psychology
University of Tampere

Inspector Helena Peltola
The Population and Child Welfare Department of
the National Board of Social Welfare
Helsinki

Director Reino Rissanen
Head of Department
The National Board of Social Welfare
Helsinki

Research Assistant Kyllikki Rönnan
The Institute for Educational Research
University of Jyväskylä

Professor Into Ruoppila
Department of Developmental Psychology
University of Jyväskylä

Dr. Pirkko Saarinen
Department of Psychology
University of Helsinki

Director Olli Sampola
Head of the Educational Department
The National Board of Schools
Helsinki

Dr. Matti Syvänen
Department of Psychology
University of Tampere

Professor Annika Takala
Department of Education
University of Joensuu

Professor Martti Takala
Department of Psychology
University of Jyväskylä

FRANCE	Miss Madeleine Abbadie Inspectrice Générale Paris
	Mrs. Terny Inspectrice des écoles maternelles Chargé d'études Direction aux enseignements élémentaires et secondaires Ministère de l'Education nationale Paris
FEDERAL REPUBLIC OF GERMANY	Professor Dr. O. Schmalohr Pädagogische Hochschule Rheinland Aachen
	Ministerialrat Walter Ministry of Education North Rhine-Westphalia Düsseldorf
ICELAND	Mr. Sigurdur Helgason
NETHERLANDS	Mr. H. Verboom Inspector of Education Middelburg
	Assistant Professor Anthonie K. de Vries Department of Education University of Utrecht
NORWAY	Professor Åse Gruda Skard formerly of the Department of Psychology University of Oslo
	Dr. Philos. Lise Vislie University of Oslo
SWEDEN	Mrs. Gertrud Schyl-Bjurman Deputy Secretary to the 1968 Commission on Pre-School Education Stockholm
	Professor Karl-Gustav Stukát Göteborg School of Education
	Mr. Sven Winberg Research co-ordinator National Board of Education Stockholm

SWITZERLAND	Miss Germaine Duparc École de Psychologie et des Sciences de l'Education University of Geneva
	Mrs. Elisabeth von Känel-Beraud Présidente de la Comission suisse pour la construction de jardins d'enfants Berne
TURKEY	Miss Güler Oral Pre-school education expert Ministry of Education Ankara
UNITED KINGDOM	Dr. Tessa Blackstone London School of Economics and Political Science
	Miss E. McDougall HM Staff Inspector Department of Education and Science London
OBSERVERS	IEA Dr. John P. Keeves
	OECD/CERI Dr. Gilbert R. Austin
	European Cultural Foundation Mr. Hans Grundin
COUNCIL OF EUROPE	Mr. B. von Mutius Head of the Division for Educational Documentation and Research